

110 TRACTOR LOADER BACKHOE



FEATURE/BENEFIT PROFILE



COMPACT TRACTOR CHASSIS

- Short wheelbase and tight 58° turning angle allows quick and easy maneuvering within tight job sites.
- Lighter weight than full-size backhoe loaders, it can be transported with a 10,000 GVW trailer not requiring a Commercial Drivers License in most states. Refer to state and local regulations for specific requirements.
- Standard heavy-duty MFWD provides additional traction, particularly useful during loading operations.
- Low-front hood maximizes forward visibility aiding completion of detail jobs with front implements.

FULL-LENGTH INTEGRATED SUBFRAME

- Provides structural base for backhoe and loader so stress loads are not transmitted through tractor components.
- Rear subframe members rest over the top of rear axle housings to provide solid base.
- Front grille guard and loader masts integrated to subframe to provide full-length tractor component protection.

LOAD-SENSING HYDROSTATIC DRIVE TRANSMISSION

- Exclusive eHydro™ electronically controlled hydrostatic drive system eliminates mechanical control linkages.
- Exclusive LoadMatch™ operating system automatically adjusts hydro drive output speed to the power available from the tractor engine, keeping the engine operating at high torque and reducing engine stalls.
- Dual pedal drive system allows quick and effortless change in speed and direction.
- Three speed ranges allow operator to tailor power and speed requirement to the job at hand.

CONSTRUCTION-STYLE HIGH-CAPACITY LOADER

- Boxed beam construction does not have welded knee to better distribute stress during loader operation.
- Standard skid steer loader Quik-Tatch bucket mounting plate gives customers the flexibility to change implements quickly and use implements and accessories that may already be in their equipment fleet.
- High lift capacities and quick cycle times provide exceptional productivity for commercial customers.
- Sturdy cast-iron loader masts curve around engine compartment to maximize forward visibility to bucket edges and steering tires. Webbed nodular cast-iron construction absorbs shock loads.

EXCLUSIVE JOHN DEERE POWER CURVE BACKHOE

- 10.1-ft. maximum digging depth meets most customer needs.
- Curved boom maximizes digging depth while minimizing required trench opening.
- Closed boom and dipperstick sections maximize strength while minimizing weight of swinging components.
- Exclusive bucket link attachment provides consistent digging power throughout bucket arc.
- Long control sticks and custom metered hydraulic valves provide feel and response of construction backhoe.
- Creep to reposition feature allows operator to easily move unit along a trench line from backhoe position.

HIGH-CAPACITY HYDRAULIC SYSTEM

- Triple pump system provides high hydraulic flows for quick loader and backhoe response.
- High flow plus high system operating pressure combine to provide best-in-class hydraulic horsepower.

OPERATOR STATION CONVENIENT FOR BOTH TRACTOR AND BACKHOE OPERATION

- High-back seat rolls over to convert from tractor operation to backhoe operation.
- Instrumentation is on right fender for easy monitoring from either tractor or backhoe operating position.

SAFETY EQUIPMENT

- ROPS and FOPS meet current construction industry requirements (OSHA, SAE, and ISO).
- Transmission and PTO Operator Presence Systems function from both tractor and backhoe operating position.

OPTIONS AND ACCESSORIES ADD PRODUCTIVITY AND VERSATILITY

- Variety of front bucket and rear backhoe options add productivity and versatility.
- Optional backhoe bucket quick-coupler allows fast and easy change of buckets and implements.
- Backhoe removes from tractor in minutes, without requiring operator to dismount tractor unit.
- Front and rear tractor and backhoe factory hydraulic options allow unit to perform many useful tasks.

PRODUCT STORY

MARKETS



The 110 Tractor Loader Backhoe is the latest addition to the family of John Deere compact construction equipment and is the first product in company history to be developed and built by all three John Deere equipment divisions. By leveraging the strengths of the Commercial & Consumer Equipment, Agricultural, and Construction & Forestry Divisions, John Deere's 110 TLB provides customers a new level of power, productivity, and versatility on farm, landscape, and construction sites.

The 110 TLB is assembled in the USA at John Deere's Augusta, Georgia, factory (JDCP, John Deere Commercial Products). The loader for the 110 TLB is manufactured at John Deere Welland Works, Ontario, Canada. The backhoe for the 110 TLB is manufactured at John Deere Dubuque Works, Dubuque, Iowa.

Model	Transmission	Gross HP	PTO HP	Hydraulic HP	Loader Lift Capacity	Backhoe Digging Depth
110 TLB	eHydro	43	33	30.9	2727*	10.1-ft.

* ASAE S301.3 standard lift capacity to maximum height at pivot pin.

The tractor unit for the 110 TLB is available only in 4WD configuration with loader installed. It will be available less backhoe as a heavy-duty loader tractor. Rear tractor rockshaft is standard equipment. Three-point hitch (either standard or hydraulic) may be ordered for field installation. The backhoe cannot be ordered separately.

Note: Loader operation requires installation of the backhoe or a rear implement with a minimum weight of 1200 lb. for proper ballast.

Primary customer groups will be:

- Equipment rental businesses
- General construction contractors
- Landscape contractors
- Utility service companies
- Governmental agencies
- Cemeteries
- Estate owners and developers
- Irrigation farmers

Typical compact tractor loader backhoe applications would include:

- Rental to contractors and homeowners completing construction activities.
- Installation or service of utilities at residential or construction job sites.
- Residential or commercial development finish grading.
- Excavation and preparation for construction of building foundations.
- Emergency utility service excavation for repair.
- Utility tractor chores such as lot mowing and cleanup, seedbed preparation, etc.
- Maintenance tasks at institutions or plant facilities.
- Maintenance of irrigation systems.

STYLING AND DESIGN CONCEPT



Styling of the 110 Tractor Loader Backhoe has been accomplished to make this product not only functional and productive, but also attractive.

Key Styling Features

- Smooth, flowing lines
- Modern arched body and canopy lines
- Formed and molded parts

Styling has been enhanced by using a variety of the latest and best component materials available.

The 110 Tractor Loader Backhoe is not just an ordinary compact utility tractor with heavy-duty implements added. It has been designed from the ground up and the seat out to maximize durability, productivity, and efficiency.

Key Design Features



- Low, forward-sloped hood.
 - Provides unmatched forward visibility for loader applications.
 - Operator can see bucket corners and front tires from seat location.
 - Hood material is a new, formed-plastic composite, Extreme Poly-Pro. This material is very similar to modern automotive bumpers and resists damage from impacts such as debris falling from loader bucket.
 - Vents on side of hood help discharge engine compartment heat.
- Instrumentation moved to right side atop fender.
 - Operator can easily monitor tractor functions from both the tractor and backhoe operating locations.
- Polyethylene canopy.
 - Curved top, rounded corners, and recessed lights help prevent equipment damage.
 - Resists abrasion, bending, or denting.
 - Retains appearance; does not rust.



- Cross-link polyethylene grille housing.
 - Extremely dent and abrasion resistant.
 - Does not rust.
- Sculptured fenders.
 - Appealing modern shape.
 - Soft flex helps to avoid damage if contacted.
 - Does not rust if scraped or damaged.
- Construction yellow.
 - Universally accepted on all job sites.
 - High visibility for increased safety on worksite.

The result gives the 110 Tractor Loader Backhoe a distinctively modern appearance.

Jun. 02 Litho in U.S.A.

TRACTOR

ENGINE



Yanmar diesel engines feature a high torque reserve that provides plenty of power under heavy load.

This 4-cylinder engine also features low levels of exhaust and emissions, reduced noise levels, and improved fuel economy. The 110 TLB engine meets all current EPA emission standards.

Model	No. of Cyl.	Engine Displacement	Rated RPM	Gross Engine HP	Net Engine HP
110 TLB	4	2.0L	2700	43	41

Key features of the engine are:

- Economical cast-in block cylinder design for good cooling and long life.
- Direct fuel injection.
 - Injects fuel directly on top of pistons for more efficient combustion.
 - Develops more horsepower per gallon of fuel.
 - Improves starting, particularly in cooler climates.
- Aluminum alloy pistons with built-in steel struts are lightweight to reduce connection rod bearing loads and provide good heat transfer characteristics.
 - Design permits tighter tolerances and neutralizes expansion of the piston, thereby reducing blow-by gas and noise resulting from piston slap.
 - Higher top rings on the piston and a thinner head gasket greatly reduce the volume of unburned waste gases and increase combustion efficiency.
- Timing gears and injector drive gears use helical profile gears.
 - Help reduce engine operating noise.
 - Gear teeth have a newly designed “roll-off” profile, giving almost no clash, no noise, and no backlash.
- Fuel filter with replaceable element.
- Full-pressure lubrication system.
 - Provides filtered oil under pressure to all vital engine parts.
- Air heater cold starting aid.
 - Electrically heated coil in intake manifold.
 - Provides quick starts in temperatures down to 0° F.
 - Engine coolant heater attachment will assist starting under extreme conditions.

- Key start and shutoff eliminates fuel shutoff knob.
 - Electric solenoid shuts fuel supply off immediately when key is turned off.
- Underhood muffler and side-discharge exhaust.
 - Fumes discharge away from operator.
 - No impairment of forward visibility when using loader or front implement.
 - Reduced noise to operator.
- Molded engine side panels.
 - Keep debris from engine compartment.
 - Reduce operating sound levels.
 - Right side unclips for quick and easy engine service.
- Auto-bleed fuel system.
 - There is no need for operator to prime the system if the tractor runs out of fuel. The system will self-prime the injection pump, lines and injectors, providing fast fuel recovery.
- A spark arresting muffler group kit is available to reduce risk of accidental fire when operating in environments with dry, combustible material.



- Dry-type air cleaner with safety element and air filter service indicator.
 - Dual element design. Main outside air filter provides primary filtration and engine protection. Secondary inside filter provides added engine protection in the event of failure of primary system.
 - Dash-mounted restriction indicator alerts operator when servicing is required.

COOLING SYSTEMS



- Engine and hydraulic oil cooling system heat exchangers are slanted rearward 21 degrees.
 - Allows lower hood profile for increased forward visibility to bucket.
 - Foam-sealed radiator shroud and high-velocity fan assures adequate airflow over all cooling elements.
 - Radiator is four-row configuration of copper and brass construction.
 - Rubber isolation mounting of radiator reduces possibility of developing cracks or leakage over time.
- Engine fan.
 - High speed for superior cooling.
 - Molded fan shroud assures airflow across all heat exchanger surfaces.



- Heavy-duty hydraulic oil cooler.
 - Provides protection from overheating during severe-duty operations at high ambient temperatures.
 - All-steel construction with fully welded cooling fins. Steel is special type that resists punctures; designed to bend on impact and not develop leaks.
 - 190 sq. in. surface area, 2-in. thick core.
 - Easier to clean. Tighter fins than radiator to avoid trapping of material which passes.
- Engine coolant recovery tank.
 - Provides coolant expansion area.
 - Reserve for engine coolant.
 - Durable steel construction.
- Drop zone below cooling elements.
 - Allows debris pulled onto radiator surfaces during operation to drop away when engine is turned off.
 - Does not require removal of side panels.
- Cooling components accessible by raising hood.
 - Quick, easy service inspection and cleaning.

FUEL SYSTEM

A 15.3 U.S. gallon (58 liter) fuel tank is molded around the steering console and loader masts. This will provide approximately eight hours of machine operation at 75% engine load before refueling is necessary. Tank is contoured to maximize fluid capacity, yet maintain forward visibility.



Fueling is accomplished just behind the left loader mast using a large 3-in. tank opening. Fuel cap is tethered to tank so it will not be lost during fueling. A lockable fuel cap is available.



Fuel tank levels are monitored by a reliable mechanical gauge near the right loader mast. In the event the tractor is run completely out of fuel, the operator merely refills the fuel tank and starts as normal.

ELECTRICAL SYSTEM

The 110 TLB has a 12-volt electrical system. Durability of many of the electrical system components has been proven on other agricultural and construction equipment.

- Weatherproof connectors.
- Durable, weatherproof switches.
- Wiring harness wrapped at all junctions.
- Leads for many popular electrical accessories have been prewired into the wiring harness.



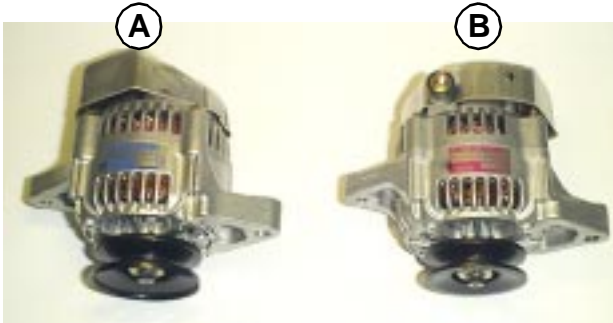
Battery is located under the right side boarding step.

- 650 cold cranking amps assure power to start even on a cold day.
- 120-minute reserve capacity provides reserve power for frequent starting and other electrical demands.

The engine has a 2.7 horsepower (2kW) starter to provide plenty of power to turn the engine over and reduce heating of starter components during starting operation.

FACTORY ALTERNATOR OPTIONS

Two alternators are available to accommodate customers who require operation of electrical accessories or desire quicker charging due to frequent operational stops.



The 110 TLB will come standard with a 40 amp alternator (A). This alternator will provide plenty of recharge capacity for most users. A 55 amp alternator (B) can be ordered as a factory installed option. This alternator will provide additional current and quicker recharge on units that have additional electrical accessories installed.

- Recommended if rear worklights are installed and used when the tractor will be idling for long periods. Not needed with rear worklights if tractor will be used primarily at operational engine speeds.
- Recommended if additional electronic accessories, such as high-intensity strobe warning light, are installed.

An alternator upgrade kit is available for field conversion to a 55 amp alternator. This kit includes an entire new alternator assembly.

CHASSIS AND DRIVETRAIN



Powertrain components for the 110 TLB have been designed to provide the efficiency and easy handling desired by customers, as well as the durability to stand up to severe-duty applications.

eHydro™ HYDROSTATIC DRIVE TRANSMISSION



The 110 Tractor Loader Backhoe is equipped with an electronically controlled hydrostatic drive transmission (eHydro) with three speed ranges.

This transmission functions as follows:

- Fluid under pressure transmits engine power to the drive wheels through a pump and motor.
- Neutral position functions as a clutch, eliminating the need for a separate dry or wet transmission clutch.
- Provides high torque for start-up or heavy loads.
- Reduces shock loads on powertrain.

Key features of this eHydro transmission drive are:

- Infinite ground speeds, even at full throttle, allow the operator to match the speed of the tractor to the task being accomplished.
- Fast and easy direction changes without clutching or hesitation.
- Fast and easy speed changes within range speeds.

Travel speeds within ranges are detailed in the Specifications section.

The LoadMatch feature on these eHydro drive transmissions allow them to respond to loads in a manner similar to torque converter transmissions commonly found on larger backhoe loaders. As drivetrain torque requirements increase, the transmission's electronic controller automatically reduces the tractor's drive speed to compensate for the increased load. This helps maintain engine rpm at higher torque levels and maintains operating efficiency, thus allowing the operator to be more productive.



Direction and speed are controlled by John Deere's Twin Touch® foot controls. These foot controls offer several operating advantages:

- Speed changes are accomplished similarly to automotive-type accelerator pedal controls, where increased speed is obtained by greater depression of the respective directional pedal.
- Direction changes are accomplished simply by repositioning the toe to the opposite pedal. This is much more comfortable when conducting operations that require constant maneuvering and does not require the operator to lift his foot as required by certain competitive treadle pedal (heel-toe) designs.
- Hands remain free during operation to steer and operate the loader or rear hitch controls.
- Tractor movement cannot be initiated without the operator in the seat. If a pedal is depressed without the operator in the seat, no signal is transmitted to the transmission. If both forward and reverse pedals are pushed at the same time, no signal is given to the transmission.

Because these pedals control tractor movement by generating electronic signals to the transmission:

- Pedal efforts are continuous throughout pedal stroke.
- There is no feedback pressure through pedal linkages, increasing amount of force required to hold pedal down as hydrostatic loads are increased.
- Mechanical linkages have been eliminated, improving durability and reliability and reducing the need for routine service.

The cruise control feature is not offered on this tractor.



The hydrostatic drive units used on the 110 TLB have been designed for heavy-duty industrial applications.

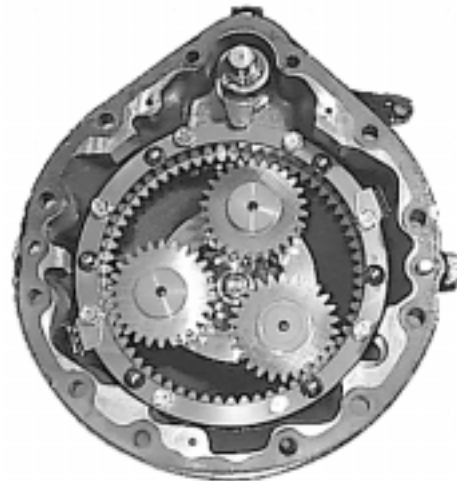
- Housings are cast iron for added strength and reduced noise levels.
- Large ductile cast iron trunnion shaft with larger support bearings reduces vibration and noise levels.
- Tapered roller bearings on the trunnion shaft reduce noise and vibration and assure a more positive neutral position.
- Higher horsepower capacity rating provides operating safety margin.

The transmission case is made of heavy one-piece cast iron.

- Strong protection for internal components.
- Provides precise mounting surface for drivetrain components.
- Functions as common hydraulic oil reservoir, providing oil for hydrostatic drive and other hydraulic functions.
- Simplifies maintenance procedures.

FINAL DRIVES

Final drive assemblies have been redesigned to accommodate the expected higher stress loads encountered with a heavier machine in more severe usage conditions.



Planetary final drives are used. The planetary drive gears distribute rear axle loads over three points for reduced stress on individual gears and longer drivetrain life. Planetary drive is located inboard to help contribute to overall axle strength.

The 110 Tractor Loader Backhoe has 12-bolt attachment of the planetary ring gear to hold components firmly in place even under severe load.



Rear axle flange is shorter than standard John Deere large chassis compact tractors, minimizing axle shaft length and increasing capacity to carry heavy loads.

DIFFERENTIAL LOCK



The 110 TLB has a foot-actuated differential lock. It is a pin-type lock in the ring gear that locks rear axle movement together, providing additional traction in tough spots.

- Allows power to be applied equally to both rear wheels.
- Foot-operated engagement pedal is conveniently located to the lower left rear of the operator platform, where it may be actuated using the heel of the left foot while the operator continues to use the right foot for tractor speed and direction control.
- May be engaged on-the-go as long as rear wheel speeds are relatively equal.
- Will automatically disengage when traction equalizes.

Differential lock should not be engaged at high speeds or used for extended operating intervals. Turning radius will be significantly increased when differential lock is applied.

BRAKES



The 110 Tractor Loader Backhoe is equipped with wet disk brakes.

- Provides positive stopping power.
- Brake disks run in cooled oil for maximum life.
- Require little adjustment.
- Unaffected by climatic conditions.

Individual rear wheel brakes are provided on the left side of the operator platform.

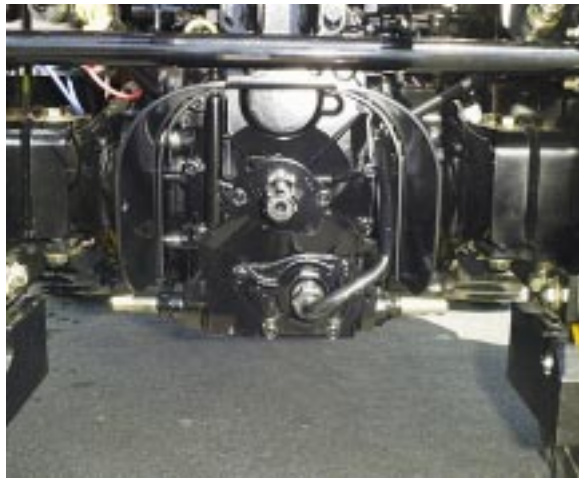
- Pendulum-style pedals are easy to push and allow independent operation of right and left rear wheel brakes.
- Actuation of individual wheel brake helps the operator accomplish tighter turns when necessary.
- Brake pedals can be locked together for safe and sure stops at all speeds.
- Pedals are operated by left foot, allowing the right foot to continue to be used for tractor speed and direction control.
- Cast-in tread design reduces foot slippage from pedal. No pedal covers to come off.

PARK BRAKE



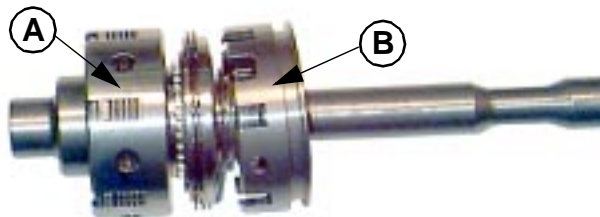
A manual park brake is provided. It is located near the left front corner of the seat. It is actuated by depressing both brake foot pedals and raising the hand lever to latch. A thumb button on the end of the handle allows release of the brake lever and return to neutral position for normal tractor operation.

POWER TAKE-OFF



The 110 TLB tractor unit has a fully independent 540 rpm rear power take-off as standard equipment.

- Meets ASAE S203.13 specifications, with 1-3/8-in. six-spline output shaft.
- Positive transfer of power through drivetrain (not hydraulically powered). PTO power is obtained at rated engine speed.
- Can be engaged or disengaged without stopping travel.
- With optional hitch kits, allows the tractor to use a variety of common rear-PTO-powered implements, such as rear-mounted rotary cutters, rotary tillers, or seedbed preparation equipment.



Power for the PTO is engaged and disengaged through the use of a multi-disk wet clutch cooled with hydraulic oil.

- A six-disk wet clutch (A) is used to engage and disengage power from the transmission independently of transmission function.
- A four-disk wet brake (B) stops PTO shaft rotation when power is disengaged, keeping implements from coasting to a stop.



Power take off function is actuated using a push-pull electrical switch conveniently located to the rear of the right side control console.

- Conveniently placed color-coded PTO engagement knob (A) is located on the right-hand console.
- PTO light on dash is illuminated whenever the PTO is engaged.
- PTO neutral start switch prevents starting the tractor with the PTO engaged.

To engage the rear PTO, the operator would pull up on the PTO engagement knob (A). To disengage rear PTO function, the operator would push down on the same knob.

There are applications when the customer may want to operate the PTO without operator in seat, such as operations of PTO powered pumps or generators. To accomplish stationary PTO operation:

- 1) Start tractor.
- 2) Set park brake.
- 3) Leave seat.
- 4) Engage PTO Drive by pulling engagement knob.

The park brake must remain set for the PTO to continue to operate.

FRONT DRIVE AXLE



The 110 TLB comes standard with a heavy-duty front drive axle to allow four-wheel-drive operation.

This mechanically driven front drive axle provides the following benefits to 110 TLB users:

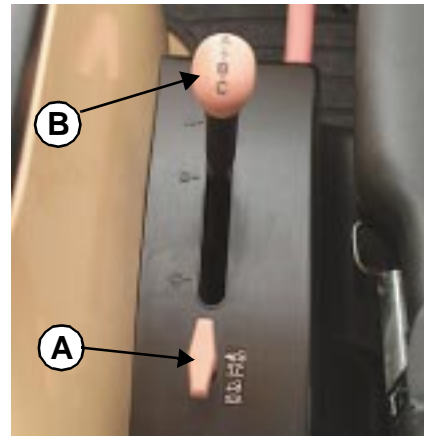
- Increased pulling power and improved traction when operating in slippery conditions.
- Reduced rear wheel slippage, particularly when moving heavy materials with the loader.
- Increased fuel efficiency (up to 20 percent) due to reduced wheel slippage during operations.
- Better floatation characteristics due to the constant pulling of the front wheels.
- Ability to operate on steeper grades when compared to two-wheel drive machines.

The benefits will be particularly noticeable when doing loader work, loading from a bank, backfilling trenches, conducting snow removal, or working in other poor tractive conditions.



Key features of this drive axle are:

- Wider and thicker cast-iron components to carry heavy loads.
- Larger transfer and bevel gears for added strength and reliability.
- Large outboard drive gears with more load-bearing surface.
- Strengthening girder underneath front axle increases load-carrying capacity and provides additional component protection.
- Centered drive line is tucked up under tractor body and fully shielded to avoid entanglement by brush or debris.
- Heavy wheel bolt-up flanges.
- Sharp 58-degree turn angle to maintain excellent maneuverability on tight job sites (turning radii in machine specifications).
- 11-degree axle oscillation to smooth out operation on rough terrain.
- Heavy cast-iron differential housing and four differential pinions spread front drive shaft loads and increase front axle durability.



Mechanical front wheel drive is engaged by pulling upward on handle (A) located just behind the range shift lever (B) to the left of the operator seat.

- Collar shift mechanism allows for engagement and disengagement “on-the-go” as long as front to rear wheel speed differential is not excessive.
- Can be easily disengaged when not needed, such as when operating on hard surfaces or during extended transport.

Engagement of 4WD axle will result in a slight increase in vehicle turning radius. Engagement of 4WD axle for extended periods on very hard surfaces will result in increased front tire wear.

POWER STEERING



The 110 TLB is equipped with hydrostatic power steering.

This makes steering easier and quicker when maneuvering the TLB around tight job sites.

- Especially valuable when carrying and maneuvering heavy loads during material handling operations.
- Reduced feedback to steering wheel when operating on rough terrain because steering system does not have direct linkage to front wheels.
- 3.5 turns lock-to-lock for quick steering response.
- Soft-feel steering wheel for increased operator comfort.

Key features of the steering system on the 110 TLB are:

- Separate hydraulic pump so steering functions are not affected by other hydraulic system demands.
- High steering system hydraulic capacity to provide consistent steering function even at low engine speeds.
- Steering cylinder and tie rods tucked up behind front axle where they will be protected from damage when operating in rough or brushy terrain.
- Heavy-duty tie rod ends for increased durability.

HEAVY-DUTY SUBFRAME



The 110 TLB utilizes a heavy integrated full-length subframe to protect important tractor components from damage due to high stress loads.

This subframe keeps operational stress loads away from primary tractor components.

- Integrates front to rear of tractor.
- Provides secure and stable mounting point for backhoe and loader.
- Rear subframe members rest on top of rear axle housing, providing large surface area to bear highest stresses unlike some competitors who bolt subframes underneath rear axle.
- Loader masts are integrated to front frame member by mid-mounted side plates. This provides exceptional loader mast rigidity without producing high stresses on lower portions of subframe and lower subframe mounting points.
- Rear cross member provides vertical stability for backhoe mounting position.



Front grille guard is integrated into front frame.

- Protects front of machine from impacts during loader operations.
- Does not interfere with tractor or loader servicing.
- Follows grille contour for pleasing appearance.
- Bars pitch downward to shed debris.
- Can be replaced without replacing front frame member.

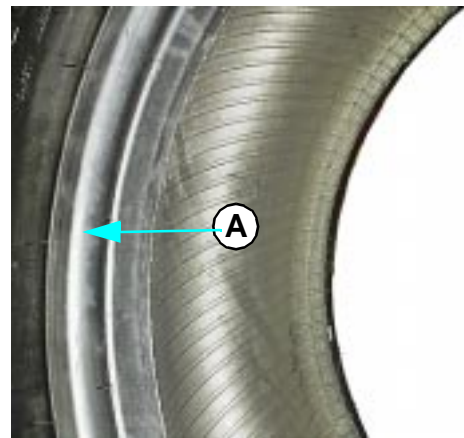
TIRES AND WHEELS



Galaxy heavy-duty tires are provided as standard equipment.

These Galaxy tires offer a number of benefits to customers over and above most OEM tire offerings:

- Wider lugs with tighter spacing provides a high 45% solid to 55% void ratio. This resulting in less weight per square inch and a significant increase in tread wear when compared to most other tires. Puncture resistance is also improved.
- Flat tread profile provides more traction, more uniform tire wear throughout the tread life, and extended tread life.
- All 8-ply rating tires assure sufficient load-carrying capacity and stiffer sidewalls for puncture resistance.
- Industrial lugs overlap 4.5-in. (114 mm) at the center of the tire where most of the tractor weight is borne, reducing the ground pressure of individual tire lugs and significantly improving tire wear.
- R4 tread front tires have “mud breaker” fingers, which extend laterally from the traction lugs to help break sticky material from between the lugs during operation and maintain traction when operated in wet and muddy conditions.



Galaxy tires also have a rim shield protector (A) built into the tire bead area. This is a raised rubber lip just outside the bead that projects beyond the rim surface.

- Helps protect the rim from damage.
- Helps reduce flats caused by debris or water working into the tire bead area.

Wheels are constructed of heavy 7-gauge steel to prevent breakage.



Front and rear wheels have steel valve stem guards to prevent breakage of valve stem when operating in mud or debris.

OPTIONAL TIRES



Galaxy “Mighty Mow” heavy duty turf tread tires have been designed specifically for the 110 TLB to allow it to be used on fine turf areas without damage.

These tires are recommended when the 110 TLB is used on golf courses, cemeteries, parks, or other areas where turf damage during transport or operation would be a concern.

- Very high 62% solid to 38% void ratio reduces ground contact pressure, protects turf, and provides longer wear when operating on asphalt or concrete.
- Tread design same as “Turf Special” tires has been proven highly effective in protecting sensitive turf.
- Elongated block lugs wrap around shoulder of tire to protect turf during cornering and under heavy loading. There are no breaks or sharp edges at the shoulder of the tire.
- Can be operated at reduced tire pressures for excellent traction in very sandy conditions.
- 8-ply rating retains machine’s load-carrying capacity.

Due to high solid-to-void ratio, these turf tires will provide much longer tread life for machines that are driven extensively on asphalt road surfaces than comparable industrial lug tires.

EQUIPMENT TIE DOWN

Front and rear equipment tie down locations are provided to secure the 110 TLB to truck or trailer during transport.



The front of the 110 TLB can be secured through a loop off the front mainframe just under the grille shell.



The rear of the 110 TLB can be secured through cutout slots in the bottom of the backhoe mainframe.

HYDRAULIC SYSTEM

The 110 Tractor Loader Backhoe has an open center hydraulic system. This system has an operating pressure of 3000 psi (20,684 kPa).

Model	System Pressure psi (kPa)	Type of System	Total Flow gpm (lpm)	Number of Pumps
110TLB	3000 psi (20,684)	Open Center	23.6 (89.2)	3

Pumps

The 110 TLB utilizes three separate hydraulic pumps.



The main hydraulic pump is located below the engine radiator and is driven by a coupler off the front of the engine crankshaft. This provides the power and high flow necessary for quick and powerful implement responses.



Two additional pumps located on the left side of the engine are driven off the engine camshaft. The forward pump provides dedicated flow for the power steering system. The rear pump provides flow for auxiliary hydraulic functions, including tractor rockshaft operation.

Filtration

For optimum protection of hydraulic components, the 110 TLB features both suction-side and pressure-side hydraulic oil filtration.



The suction-side hydraulic oil filter (A) is a spin-on canister located along the main hydraulic oil pick-up line; filtration is 25 micron. The pressure-side hydraulic oil filter (B) is located in the main hydraulic pressure return line; filtration is 10 micron.

CONTROL VALVES

The 110 TLB comes standard with a two-function loader control valve.



This valve utilizes a series-type boom valve spool rather than the parallel-type boom valve spool used for other John Deere compact and utility tractor loaders. All other spools in the valve remain parallel-type systems. The series system in this valve spool:

- Allows bucket rollback or dump during movement of the boom without affecting the speed of boom travel.
- Allows return oil from the boom lift cylinders to be reused in the bucket cylinders to roll the bucket back after dumping while at the same time lowering loader boom.
- Allows quicker loader cycle times, particularly during loadout operations.
- Still allows for full power to individual functions, such as bucket rollback or boom lift, when needed.



An electrically controlled hydraulic switch is located inside the right side subframe. This switch automatically detects that the backhoe has been removed from the tractor unit and diverts auxiliary pump oil to activate the tractor rockshaft. Some competitive tractor-based TLB's require that directional hydraulic valves be turned manually by the operator if the backhoe is removed.

Note: The operator still must connect the backhoe hydraulic supply hose to the tractor return line when the backhoe is removed to prevent the hydraulic system from operating in relief.

The 110 TLB's combination of hydraulic flow and hydraulic pressure provide exceptional hydraulic horsepower and efficiency for a vehicle of this size.

LINES AND CONNECTIONS

High quality hydraulic lines and fittings are used throughout the machine.



All hydraulic joints are equipped with O-ring face seal fittings.

- Flat mating surfaces are sealed with soft rubber O-ring.
- Seals are more tolerant to over-tightening and vibration.
- Fittings can be reused.
- Joints are easier to reassemble after service.
- Prevent air intrusion into hydraulic system.
- Lower cost service; just replace O-ring.



Loader hydraulic lines meet or exceed SAE 100R6 specifications. Lines are precisely routed to reduce the possibility of damage during operation. Lines in contact with tractor components are sheathed in Cordura coverings.

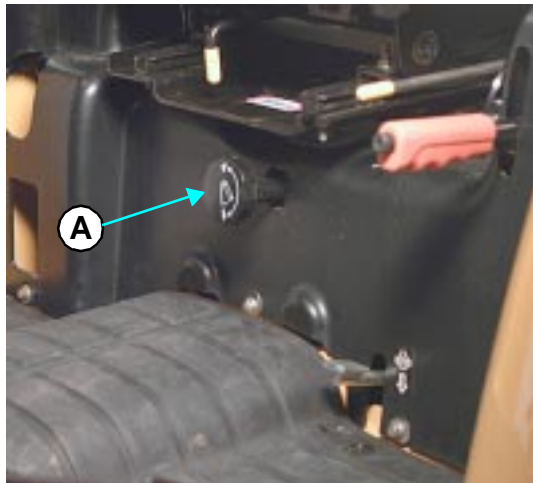
Steel lines are used where hydraulic lines do not have to flex. Backhoe steel lines are double-wall thickness to sustain expected peak spiked hydraulic loads. Backhoe hydraulic hoses are single-wire braid with a minimum burst pressure of 12000 psi. The hose covering is very abrasion resistant.

REAR ROCKSHAFT

The 110 TLB comes standard with a rear rockshaft for lifting rear-mounted implements.

Note: The 110 TLB does not come standard with rear 3-point hitch components, such as center link, lift links, drag links, and stabilizer bars. These must be ordered as a field installed kit.

This rockshaft has position control only. The rockshaft position control lever is located at the right side of the operator seat during tractor operation. The rockshaft control valve allows precise control without implement jerking or leak-down. The rockshaft will not produce down pressure on rear implements.



A rate-of-drop valve (A) located directly below the seat allows the operator to adjust the lowering speed of the rockshaft arms.

- Light implements can be lowered quickly.
- Heavy implements can be lowered more slowly to avoid implement and tractor damage.
- The valve can be completely shut off to lock implements in place.

Note: Rockshaft arms must be in the fully lowered position to install the backhoe.

HYDRAULIC OPTIONS

Two tractor hydraulic options are available on the 110 TLB, allowing it to meet the specific hydraulic power needs of most of your customers.

Note: These options will be available only as factory installations. Field conversion kits will not be available.

These options can be obtained by selecting the proper order option codes at time of initial order.

THREE-FUNCTION LOADER HYDRAULICS

This option (order code 7020) provides a third auxiliary hydraulic function for the 110 TLB loader. This option will be required to power hydraulic cylinders opening and closing the jaws of the Worksite Pro® multi-purpose front bucket (order code 8020), or to operate other front implements with hydraulic cylinders (grapple buckets, etc.) or hydraulic motors (angle brooms, etc.). Third-function hydraulic power can be either “switched flow” as required for multi-purpose front buckets, or “continuous flow”, as required for rotary brooms, etc. The continuous flow function is reversible.



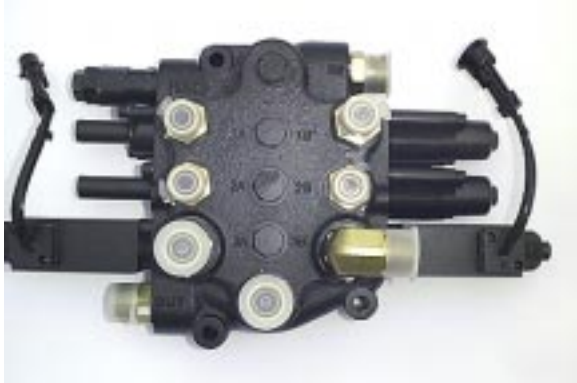
This option includes a special main loader selective control valve that has an electronically controlled third valve spool. Functions are controlled by enabling switches and joystick touch buttons as described later.



5/8-in. steel tubes route hydraulic oil to outlets mounted on the left side of the loader torque tube near the front of the loader. Couplers are 1/2-in. flat-face male and female. They are compatible with most skid steer loader front hydraulic applications.

THREE-FUNCTION LOADER HYDRAULICS WITH THREE-FUNCTION REAR TRACTOR HYDRAULICS

This option code (order code 7030) provides the third auxiliary hydraulic functions for the 110 TLB loader as described above, in addition to three rear hydraulic outlets at the back of the tractor. These rear hydraulic outlets are required to operate the hydraulically adjusted “top and tilt” hitch (LVB25340). They will also be required to operate any rear implement that requires a hydraulic cylinder for lifting, movement, or a continuous flow for drive. These rear hydraulic outlets do not provide auxiliary hydraulic power to the backhoe unit (requires order code 8220).



This option again includes a special main loader selective control valve that has an electrically controlled third valve spool. Functions are controlled by enabling switches and joystick touch buttons as described later.



Hydraulic power is switched from front to rear application using an electrically controlled diverter valve block located underneath the tractor. All hydraulic lines into and out of this valve assembly are hard steel lines with O-ring face seals at all joints.

Loader outlets for this third hydraulic function are the same as those described above for (order code 7020) Third Auxiliary Hydraulic Loader.



Outlets for rear hydraulic applications are located on the inside left subframe near the rockshaft lift arm. Outlets consist of three sets, side by side, with 1/2-in. couplers. The top outlet only can provide both “switched flow” and “continuous flow.” All other outlets are “switched flow” only.

OPERATION OF OPTIONAL AUXILIARY HYDRAULIC SYSTEMS

Control of either of these optional auxiliary hydraulic systems is accomplished by rocker switches and fingertip controls on either the seat close-out panel or joystick.

Two rocker-type switches are provided. These switches are located between the seat and the SCV joystick console.



To activate switched hydraulic flow from the third SCV valve, depress the forward portion of the activation switch (C) nearest the seat. To activate continuous hydraulic flow from the third SCV valve, depress either “A” or “B” on the 3rd SCV full flow switch (D). Depressing “A” will provide hydraulic power to the male front coupler nearest the loader boom, with return through the female front coupler. Depressing “B” will reverse the power and flow.

Once the auxiliary hydraulic system has been activated, switched hydraulic flow can be controlled with the touch of a button on the SCV joystick.



By depressing the top portion of the vertical switch pad (E), hydraulic flow is directed to open the jaws of the Worksite Pro Multi-Purpose Bucket. By depressing the bottom portion of the vertical switch pad (F), hydraulic flow is directed to close the jaws of the Worksite Pro Multi-Purpose Bucket.

The vertical switch pad on the joystick only controls third valve function for switched flow, enabled by switch (C). If continuous flow is selected, flow must be stopped by bringing the third continuous flow switch to the centered or neutral position.

For units equipped with third function loader hydraulics with electric diverter valve for three-function rear tractor hydraulics, hydraulic function is switched from front to rear using the forward toggle button on the joystick (G).



Upon initial activation of third hydraulic function (depressing switch C), the forward portion of the hydraulic function indicator panel in the dash will light up (H). When hydraulic function is changed to the rear (depressing switch G), the rearward portion of the hydraulic function indicator panel in the dash will light up (I).

When units with the third hydraulic function with electric diverter valve are switched to the rear operating position (as above), all hydraulic functions for the rear hydraulic outlets are controlled with the SCV joystick. Fore-and-aft movement of the SCV joystick activates hydraulic power through the lower set of rear couplers. Side-to-side movement of the SCV joystick activates hydraulic power through the middle set of rear couplers. The vertical touchpad on the joystick control activates hydraulic power through the top set of rear couplers.

These hydraulic options provide the best means of meeting your customers' hydraulic power requirements. Controlling mechanisms are state-of-the-art with built-in wiring harnesses. All lines are solid steel piping with O-ring seals at all joints.

OPERATOR'S STATION



The operator station for the 110 TLB has been designed specifically to maximize customer productivity with minimum effort. Visibility to work areas has been optimized, which is particularly critical on job sites that require precise implement movements. Controls are conveniently placed for both tractor and backhoe operation.

Virtual reality was used early on in the design process to assure that the tractor operator has visibility to vital forward work areas.

- Low, forward-sloped hood and low loader boom arms provide excellent visibility to loader bucket and just ahead of tractor.
- Fuel tank and loader masts contour inward around tractor body to provide excellent visibility to front tires and loader bucket rear edges.

Visibility to the rear for backhoe operations was also a prime consideration. This is covered in more detail in the Backhoe section.

PLATFORM

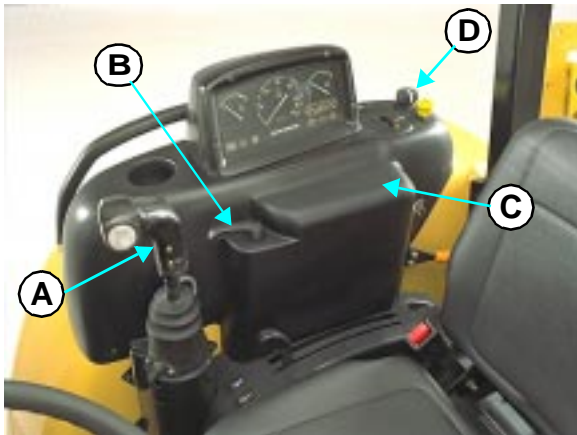


The operator's platform is accessed using a sturdy left side step. This step is perforated and has a steel lip on the outside edge to allow safe boarding even in muddy conditions. The step is located inboard of the tractor wheels so it does not stick out to catch on passing objects.

Large, contoured grab handles on each fender can be used to assist the operator in boarding the tractor.

Foot platform for the operator is rubber-mounted and incorporates a thick rubber floormat for operator comfort. Brake and drive pedals are slightly forward of the cowl to provide the operator with plenty of legroom.

CONTROLS



Engine, lighting, and PTO controls previously located on the front cowl area have been moved to a right side control console so they will be accessible to the operator from either the tractor or backhoe operating positions.

- Single-lever joystick (A) located near the right front corner of the seat allows the operator to easily control SCV functions with his arm in a relaxed, natural position. T-shaped grip fits hand naturally.
- Turn signal control (B) is also at fingertip position for easy use during forward travel of the tractor.
- A convenient arm-rest (C) is molded into the console to provide a rest position for the right arm.
- Lighting controls (D) are toward the rear of the console so they are accessible during backhoe operation.



The ignition switch and throttle have been positioned to the rear of the right console so that they are accessible during both tractor and backhoe operation.

Control levers are both color- and shape-coded for easier recognition and are positioned for convenient operation.

- Controls to the operator's right:
 - Rockshaft lift lever
 - Auxiliary hydraulic enabling switches (optional)
 - Loader or auxiliary hydraulics control valve lever
 - Turn signal indicator lever
 - Creep to reposition switch and thumb bar
 - Vehicle lighting switch
 - Rear PTO switch
 - Ignition switch and key
 - Throttle
- Controls to the operator's left:
 - Seat adjustment lever
 - Park brake engagement lever
 - Range shift lever
 - 4WD engagement lever

A toolbox is molded into the left-hand fender for quick and easy access to either tools or the operator's manual.

INSTRUMENTATION



The instrument cluster has also been moved to the right side fender console to allow the operator to easily set and monitor tractor functions while either in the tractor or backhoe operating positions.

Critical tractor operating functions are monitored on the instrument panel display:

- Engine tachometer
- Digital LCD hourmeter
- Hydraulic oil temperature indicator
- Engine coolant temperature gauge
- Optional auxiliary hydraulic function screen
- PTO engagement indicator light
- Air restriction indicator light
- Air heater starting system indicator light
- Battery charge light
- Park brake engagement light
- Oil pressure indicator light
- Turning signal or hazard flasher lights

This easy-to-read instrument panel is backlit for excellent night visibility.

SEAT



The 110 TLB has a single seat, which functions for both tractor and backhoe operating positions.

This seat has large seat and back areas. The soft foam core with bonded heavy all-weather plastic covering is durable to sustain years of outdoor usage.



The seat is adjusted fore-and-aft by lifting up on a small lever at the front left corner of the seat.



The seat is “rolled over” to the backhoe operating position by adjusting to the rear-most position, pushing a latch release lever located directly underneath the front of the seat to the left side of the vehicle, and at the same time lifting up on the seat bottom cushion.



When the seat is rolled to the backhoe operating position, seat elevation is increased 5.9-in. (150 mm) to provide better visibility to the rear and into a trench during backhoe operation.

The seat is equipped with operator presence safety switches which do not allow the tractor to be moved unless the operator is seated. Switches are provided for both tractor and backhoe operating positions.

The seat is equipped with a retractable seat belt, which may be worn for tractor or backhoe operation. The retracting mechanism keeps the belt from deteriorating and becoming tangled in controls.

CANOPY



A large 26 sq. ft. canopy provides protection to the operator.

- Constructed of impact-resistant polyethylene to resist damage. Retains appearance and does not rust.
- Curved corners and contoured shape to enhance styling and shed debris and water.
- Built-in recesses provide added protection for lighting equipment.
- Extra length provides protection to operator even when in backhoe operating position.

OPERATOR PROTECTION



The 110 TLB has a four-post rollover protective structure to protect the operator in the event of a tractor tip-over.

A heavy tubular structure surrounds the operator at each corner of the operator station.

- This structure is certified to current construction equipment standards in accordance with SAE J1040 to 9000 lb.

Falling object protection is provided by a plate on top of the tractor canopy.

- This structure is certified to current construction equipment standards in accordance with ISO 3449 Level 1.

Retractable seat belt is provided as standard equipment. The seat belt is functional in both the tractor and backhoe operating positions.

LIGHTING



All operational and safety lighting is mounted on the canopy.

- Higher location provides better visibility to work areas, particularly during loading operations.
- Higher location provides better visibility of warning and safety lights during transport on roadways.

Standard lighting includes:

- Two forward-mounted 55-watt halogen work lamps.
- Two forward-mounted amber warning lamps.
- Two rearward-mounted amber warning lamps.
- Two rearward-mounted stop/tail lamps.

Optional lighting is available either factory or field installed.

LOADER

The 110 Tractor Loader Backhoe is equipped with a high-capacity construction design front loader as standard equipment.

Lift Capacity	lb. (kg)
To maximum height at pivot pins	2727 (1237)
To 1.5 m at pivot pins	3133 (1421)
To maximum height	2042 (926)
To 1.5 m	2530 (1148)

Note: Per ASAE S301.3 specifications.

Excellent hydraulic flows in combination with appropriately sized hydraulic cylinders give the 110 TLB loader quick cycle times for increased productivity.

Performance	Seconds
Boom raise time	3.44
Boom lower time	2.31
Bucket dump time	2.94
Bucket rollback time	1.92

Note: Unloaded times per ASAE S301.3 specifications.

BOOM DESIGN

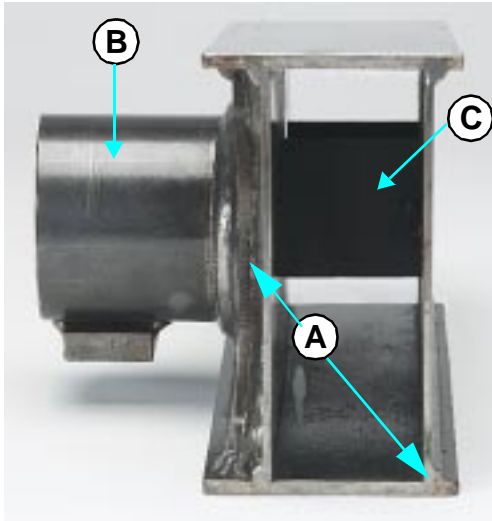


Loader components have been designed to maximize strength and durability, yet provide the operator with excellent forward visibility.

- Unlike typical farm loaders, boom arms are continuous-curve box-section design constructed of single-piece side plates combined with top and bottom members. This design eliminates the typical welded and plated loader knee at the joint between the top and lower boom arms.
- Loader boom arms have been designed to follow the hood contour to maintain excellent forward visibility.
- The low angle between top and lower boom arms helps effectively transmit the pushing force of the tractor without risking boom failure.
- Boom components are made of high-strength, low-alloy steel to maximize strength and carrying capacity while minimizing component weight.



Additionally, the loader booms taper inward 5.9-in. (150 mm) at their tractor mounting locations to allow excellent front drive tire and front bucket edge visibility during operation.

MAST DESIGN

The 110 TLB loader utilizes closed box construction for maximum strength.

- All plates are laser cut to assure precise fit.
- Boom components are continuous seam robotically welded (A) for maximum strength and process uniformity.
- Heavy thick-wall round torque tube (B) joins loader booms together to prevent distortion under severe stress loads.
- Internal baffle plates (C) provide additional strength and protection against boom collapse.



The loader has a standard construction-style boom lock device. It should be used anytime the boom is raised for servicing the machine.

- Allows locking of the boom in raised position to provide for easy service, particularly in restricted areas.
- Lock device pins underneath boom when not in use.
- Tethered pin for easy installation.



Loader masts are made from ductile cast iron.

- Internal “Z-form” webbing absorbs high-stress shock load energy without deforming material.
- Cast design allows loader mast to follow tractor cowl contour for tighter fit and better forward visibility, particularly to front drive wheels.
- Provides solid and precise boom mounting points to assure stress loads are carried properly even after significant usage.

MOUNTING

The loader is solidly mounted to the tractor through the sub-frame structure.

- Lower portion of loader masts mount to rear subframe sides, clutch housing, and engine block to provide excellent horizontal stability.
- Side plates mount from mid-point on loader mast to front subframe to provide greater vertical stability to mast components.



Mounting points for the boom and cylinders, where movement occurs, have been strengthened for commercial use.

- Boom ends have hardened, replaceable bushings, reducing wear and allowing refitting after substantial use.
- Mast mounting pins are flagged to eliminate rotation.
- Cylinder mounting pins are through-pinned to eliminate undesired rotation.

CONTROLS



Control for loader hydraulic functions is accomplished by a single-lever joystick located conveniently beside the seat.

- Location allows usage in relaxed position for right arm.
- T-shaped control handle fits comfortably in palm of hand.
- Safety lock allows the operator to lock the SCV handle and minimize rapid movement of the loader or attachment.

When single loader functions are desired, the loader control handle can be moved either fore-and-aft or side-to-side. When multiple loader functions are desired, the loader control valve can be moved both fore-and-aft and side-to-side at the same time.

BUCKET / IMPLEMENT MOUNT



The 110 TLB loader comes standard with skid steer loader type implement mounting plates.

- Provides for quick and easy front bucket and implement changes.
- Allows for use of many skid steer loader buckets and implements. (See Specifications section for details.)

These mounting plates have been specifically designed by John Deere for durability and ease of use.

- Wide plate surface area (135 sq. in. each) prevents mounting plate from pushing through back of bucket during severe use.
- Rotating pawl design requires less force to engage or disengage than most competitors.
- Ribbed cast-iron handle provides sturdy, easy grip during engagement and disengagement.
- Curved ends of top plate ease entry into implements.
- Pawl engagement operates well in mud and debris.
- No lower sleeves that must be greased.



Mounting plates are connected to bucket cylinders using a four-bar linkage system.

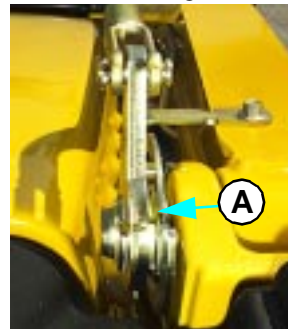
- Provides 45-degree bucket rollback and dump angles.
- Constructed of heavy-duty cast iron.
- Protected grease fittings.

BUCKET POSITIONING



The 110 TLB loader comes standard with a mechanically actuated bucket anti-rollback linkage. This system automatically adjusts the position of the bucket as the boom is raised.

- Prevents spilling of material back onto the machine during loading operations.
- Improves productivity with faster and easier load-out cycles.
- Very little feedback through SCV lever.
- Does not automatically control bucket during lowering cycle, allowing operator to reposition bucket as desired.
- Bucket cannot be rolled back in raised position, which could dump material on machine or operator.
- Bucket leveling can be easily adjusted at the linkage.



Two methods allow the operator to determine the position of the bucket.

- A bucket level indicator (A) is provided just to the inside of the right side loader mast. When the notches in the indicator wheel line up, the bucket is parallel with the ground. This method is easy to use when the bucket is raised.
- Standard and heavy-duty buckets have edge tabs (B) formed into their side plates, which are parallel with the cutting edge of the bucket. This method is easy to use when the bucket is lowered.
- Allows operator flexibility of using whichever method is most convenient.

LOADER HYDRAULIC OPTIONS

The 110 TLB loader is available with front hydraulic outlets to power a variety of hydraulically actuated implements and accessories. Specific features of these options are covered in the Hydraulics section, Hydraulic Options. All loader hydraulic options (order code 7020 or order code 7030) are available only as factory installed. There will be no field conversion kits available.

LOADER IMPLEMENT OPTIONS

A variety of loader bucket and implement options have been provided to increase the versatility and productivity of the 110 TLB.

Standard, heavy-duty, and utility (light material) buckets have been designed and built by John Deere.

- Frame and body is constructed of high-strength, low-alloy steel for maximum strength and durability and minimum weight. This material resists dents and damage much better than common mild-grade steel.
- Cutting edges and wear bars are made of high-alloy 1055 steel for longer wear.
- Smooth, rounded back for better filling and easier cleanout, particularly if operating in wet conditions.
- Ends have side cutting plates for additional strength and wear.
- Built-in edge tabs at the top of the side plates assist the operator to determine angle of cutting edge during operation.
- Predrilled for replaceable cutting edge or toothbar.
- Standard skid steer loader back allows installation on other machines where appropriate.
- Designed to optimize load-carrying capacity without compromising durability.

The Quik-Tatch skid steer loader mounting system allows all buckets and front implements to be quickly and easily mounted in seconds.

Detail specifications are included in the Specification section.

BUCKETS

STANDARD BUCKET



An economical standard-duty bucket is available. This bucket has all of the features listed above, but does not include a bolt-on replaceable cutting edge.

- This bucket is recommended for light- to moderate-duty applications.
- Bucket is predrilled to add cutting edge later if desired.
- This bucket is available for either factory or field installation.

HEAVY-DUTY BUCKET



A general purpose heavy-duty bucket is available. This bucket has all of the features listed above, in addition to a replaceable and reversible hardened steel bolt-on cutting edge.

- Significantly strengthens bucket edge for additional durability and wear under severe usage.
- Factory installed at time of manufacture.

This bucket is recommended for moderate- to severe-duty applications. This bucket is available for either factory or field installation.

UTILITY OR LIGHT MATERIALS BUCKET



A utility or light materials bucket is available. This bucket has all of the design features listed above but does not include a bolt-on replaceable cutting edge.

- 1-ft. wider than standard buckets.
- Slightly higher and longer profile to provide additional carrying capacity.
- Struck capacity is approximately 1 cu. yd., which makes it convenient for users who sell landscape material by volume.

This bucket is recommended for use with light or high-volume materials (less than 75 lb./cu. ft. or 1.22 kg./cubic liter). This bucket will be available only as field installed equipment.

MULTI-PURPOSE BUCKET



A multi-purpose or “4-in-1” front bucket is also available. Use of this bucket requires the three-function loader control valve for the tractor.

- Hydraulic cylinders with hardened rods provide long, dependable life.
- Heavy-duty top torque tube equalizes load forces when grappling.
- High-alloy 1055 steel used at high wear points.
- Serrated inside edges to assist in gripping and holding material in jaw.
- Higher profile provides good load-carrying capacity.
- Forward edge predrilled for bolt-on replaceable cutting edge or tooth bar.
- All pivot points lubricated with grease fittings.
- Leading edge of bucket jaw predrilled for addition of bolt on cutting edge if desired.

This bucket allows the operator to perform a number of functions, such as bulldozing, scraping, clamping and lifting material, loading, and precisely metering material as the bucket jaws are opened. This bucket is available for either factory or field installation.

PALLET FORKS



Rail-style front pallet forks are available.

- Rail-style fork mounting holds forks in rigid position so they stay set during maneuvering for load.
- Eight fork setting positions between 8-in. (203 mm) and 40-in. (1016 mm) at 4-in. (102 mm) intervals.
- Single-piece backrest provides excellent forward visibility yet stabilizes load during transport.
- 10-degree back angle gives forks greater breakout capacity for heavy loads and allows forks to be tipped to a steeper angle.
- ITA Class II certified tines.

Pallet forks are a very versatile tool to unload pipe, conduit, lumber, and other palletized materials. Pallet forks are available as a field installed implement only.

Specific lifting capacities for pallet forks with 110 TLB are provided in Specifications section.

BACKHOE

DESIGN



The backhoe for the 110 TLB has been designed and built by John Deere Dubuque Works, Dubuque, Iowa, and is installed on the tractor unit at John Deere Commercial Products, Augusta, Georgia.

Key features of this new backhoe:

- Construction designed and tested.
- John Deere Power Curve™ excavator-style boom.
- Custom computerized design of main control valve.
- John Deere construction-grade Series 120 hydraulic cylinders.
- Heavy base platform and cast-iron swing frame.
- Long stick controls.
- Quick-release transport locks.
- Exceptional stabilizer lift and leveling ability.
- Exclusive “creep to reposition” vehicle movement from backhoe operator position.
- Quickly and easily removed from the tractor unit so it can be used for utility work.
- Options and accessories add versatility and value for customers.

OPERATOR PLATFORM



Visibility to the rear for backhoe operations was a primary design consideration.

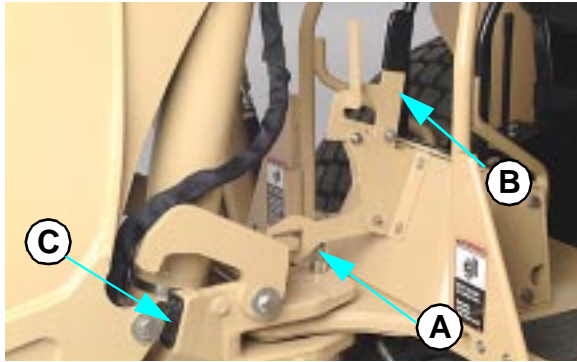
- Key backhoe components, including control valves, are placed below the backhoe base platform, eliminating the need for a bulky control console near operator.
- Backhoe boom section is narrowed in the center to allow better visibility to the bucket and digging area when in trenches.
- Backhoe hoses and lines are tight against boom and cylinder to further improve visibility and avoid damage during deep trenching operations.
- The operator foot platform is generous and uncluttered. Non-skid mats are provided. The platform does not have a side lip, so it can be cleaned easily.
- Stabilizer control levers are close together to allow operation with one hand.

Note: The 110 TLB uses standard backhoe two-lever controls. Because each spool function is specific, it cannot be converted to ISO control configuration common to excavators. Three-lever Case controls will not be offered.



The backhoe operator station and controls are functional and convenient.

- Grab handles are provided to assist the operator in moving from the tractor operator position to the backhoe operator position.
- The operator sits 5.9-in. (150 mm) higher in the backhoe position than the tractor position, providing better sight lines into the excavation area.
- Long main control rods curve inward toward the operator to allow backhoe operation with operator's arms in a relaxed position. Control rod effort is low to avoid tiring during extended operation.
- A U-shaped grab handle extends above control console to provide additional stability during mounting or moving to backhoe platform.



Once the machine is set, it can be readied for digging operations very quickly without the operator leaving the backhoe seat.

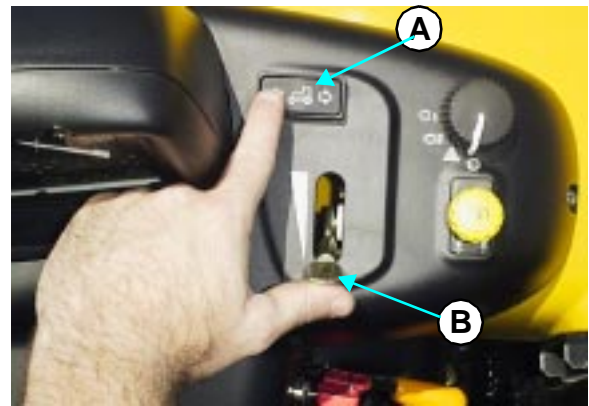
- The vertical drop boom swing pin (A) has a large lift hook and can be reached from the backhoe seat. A storage location is provided nearby on the lower grabrail.
- The "one-touch" boom lock lever (B) is lifted by simply pushing a latching lever forward after the boom has been moved to its highest position.
- The boom lock lever can be engaged regardless of the swing angle, allowing the boom to be pinned up even if it is transported at an angle.
- Rubber latch cushions (C) help reduce transmission of shock loads generated during transport from the boom to the mainframe.

The boom lock system will be particularly beneficial to customers who must transport their machine over rough areas, as operators will not experience the boom chucking against the stops like competitive machines.

CREEP TO REPOSITION FEATURE

To assist in moving the tractor unit during trenching operations, a unique repositioning creeper drive was designed for the 110 TLB. This drive system allows the operator to move the tractor forward or backward at slow speed when in the backhoe operating position.

Without this drive system, (1) the operator would have to take the time to move to the tractor operating position where drive controls are accessible, relocate the tractor, then move back to the backhoe operating position, causing loss of time not performing the primary task at hand; or (2) using backhoe boom and hydraulics, the operator could lift the rear of the tractor unit up and push it ahead, causing extraordinary stress on both tractor and backhoe unit as well as raising safety concerns.



The repositioning creeper drive control is located at the rear of the right fender console, just to the left of the operator when in backhoe operating position. Controls include a directional switch (A) and speed control lever (B). The directional switch must be held down as the speed lever is advanced. The motion alarm will sound as soon as the directional control switch is pressed. The speed control lever allows only limited travel speed. The operator must be seated in either the tractor or backhoe operating positions for the drive control to activate.

Note: To conduct this operation the park brake must be returned to neutral position, the tractor placed in A or B speed range, and the stabilizers and front loader implement raised to clear the surface.

BOOM AND DIPPERSTICK



The excavator-style boom on the 110 TLB backhoe provides a number of important benefits for users.

- Excellent digging depth with minimum ground disturbance, keeping trench length short and reducing the amount of time and material required to return jobsite to original condition.
- Tighter bucket retraction and lower overall height for easier transport.
- Closer excavation to machine than straight booms, reducing the need for repositioning.
- Easier and safer loading of materials into truck, with greater loading reach especially in close to vehicle.
- Better placement of tailing materials.
- Backhoe weight carried farther forward for faster and smoother travel when conducting loading operations or during transport.



Boom components for the 110 TLB backhoe are unique.

- Constructed of high-strength, low-alloy steel to maximize strength and minimize swinging weight.
- Laser cut and robotically welded for consistency and uniformity in construction.
- Boxed construction with double end plates for highest strength with minimum weight.
- Boom and crowd cylinders mount outside of boom structure, keeping hydraulic lines of force away from the boom interior.
- Pivot points are wider at the joints than in the middle of the main boom assembly to provide additional strength against torsional loads.

The dipperstick is also of closed box construction for maximum strength and minimum weight.

Less than half of the overall weight of the backhoe unit is in swinging components away from the mainframe. Backhoe components that are in motion during digging and loading operations are light to reduce the amount of momentum when movement is stopped. Backhoe components that are not in motion during operation (for example swing frame and base) are heavy. This increases the stability of the machine during operation and increases the life of backhoe digging components.



The swing frame is an integral part of the backhoe, as much of the digging forces are transmitted through it.

- Heavy cast-iron construction assures precise mounting of backhoe components.
- Wide 18.1-in. (459 mm) main swing joint reduces the amount of stress force transmitted to swing pivots during digging operations.
- Wide mounting of swing cylinders aids in developing swing torque.

STABILIZERS AND STABILIZER FEET



Rear stabilizer arms provide stability to the unit during digging operations.

- Arms are angled rearward 18 degrees to provide greater stability when digging under severe conditions.
- Arms are curved at inboard end to allow tighter tuck of stabilizers to machine during transport.

Stabilizer hydraulic cylinders are powerful enough to set the tractor to three-point digging stance when the engine is at idle.

- Full 13-degree lift angle allows unit to be leveled on steeper slopes unlike many competitive machines.
- With 9951 lb. (4513 kg) of lift capacity at ground level, quick response and easy positioning of stabilizer height is assured.
- Hydraulic lock-outs are provided in each end of the cylinders. These lockouts help hold the cylinders during operation and during transport, helping prevent cylinder leakdown.

At the end of each stabilizer arm is a cast-iron stabilizer foot pad.

- A flat side (down in photo) is provided for operation on hard and flat surfaces, such as asphalt and concrete.
- A spiked side (up in photo) is provided for operation on dirt or soft surfaces. From the center this spike slopes to the sides, forming a triangular shape. This triangular shape adds flotation and stability as the stabilizer is pressed into the ground.
- No tools are required to change from spiked to flat surface and back. Simply rotate the foot past a rubber centered stop. This stop prevents the pads from rotating to an alternate position during transport or lowering of stabilizers.

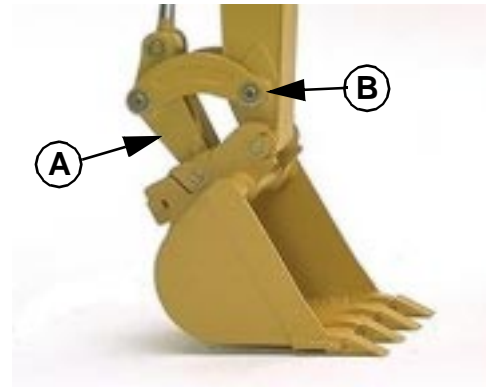


Solid rubber stabilizer pads are available as a factory installed option.

- Highly recommended to reduce surface damage if machine is operated on asphalt or concrete surfaces.
- Solid rubber surface provides exceptional wear and additional traction when digging on slick or finished surfaces.

These pads will also be available individually through the parts system.

BUCKET LINKAGE



The 110 TLB backhoe utilizes an exclusive John Deere cast-iron power link system to attach the bucket to the bucket hydraulic cylinder.

The rotating end of the backhoe bucket is attached to the bucket hydraulic cylinder through a cast-iron intermediate power link (A). Cast-iron guide links (B) are provided to maintain bucket alignment during operation.

This bucket linkage system provides the customer with a number of important benefits.

- Provides 190-degree bucket rotation, allowing better vertical wall digging.
- Increased curl does not require repositioning of the bucket linkage for truck loading operations.
- Linkage provides more consistent force throughout the digging arc than conventional linkages, increasing its ability to dig in hard conditions.

HYDRAULICS

The main backhoe hydraulic control valve is a Series 5000 sectional valve from Hydraulic Unit Specialty Company (Husco). This valve has been custom designed and computer tuned for optimum performance on the 110 based on backhoe geometry, hydraulic cylinders, and expected loads.

This valve offers exceptional performance and balance for primary backhoe functions:

- Level grading.
- Dipperstick crowd and bucket curl.
- Boom swing and drop.
- Boom raise and swing.

Cross-functional metering is excellent, allowing for smooth continuous backhoe operation even with inexperienced operators. The hydraulic system is configured such that full hydraulic horsepower is available for each backhoe function, including side swing.



The backhoe main control valve is located under the operator platform inside the base frame.

- Out of view of operator during operation.
- Easy to access for service if required.
- Hoses route directly and comfortably through swing frame.
- Pressure relief valve can be accessed or serviced without removal of main control valve.
- Swing cylinders mounted in cast-iron pillow block for easy service if required.
- Circuit release workports are provided for all hydraulic functions to protect equipment and lines from spike pressure failures.

Because hoses lay in a natural and relaxed pattern within the swing frame and along the boom, hose replacement when necessary is quick and easy.

BACKHOE HYDRAULIC OPTIONS

Backhoes may be equipped with an auxiliary seventh function hydraulic valve to operate a variety of hydraulically controlled or driven attachments and accessories. This option is available factory installed. Accessories available include a hydraulic demolition hammer, a hydraulic auger, and a hydraulic thumb.



Backhoe auxiliary hydraulic functions are controlled with a foot pedal just to the left of the control pedestal. This allows the operator to control the implement placement with the regular backhoe hand controls and implement activity with the foot control. The foot pedal allows continuous flow in either direction, depending on which direction the pedal is pushed.



Hydraulic lines are routed to remote couplers on the dipperstick. Couplers are 1/2-in. flat-face, same as found on many compact excavators, increasing implement compatibility.

HYDRAULIC CYLINDER DESIGN AND MOUNTING

Hydraulic cylinders used on the 110 TLB are made by John Deere Cylinder Division in Moline, Illinois. They are backed by millions of hours of field and lab testing.



Cylinders are construction-grade John Deere Series 120. They have been computer designed specifically for the 110 TLB for strength, durability, and performance.

- Rods are forged from high-carbon steel, assuring alignment of grain in metal and superior resistance to fatigue over time.
- Forged rod ends and cap ends hold cylinders firmly in place.
- Rod ends are friction welded to bond entire metal surface together for highest strength.
- Rod guides are snap locked for easier removal, and have excluder seals to keep out dirt and debris.
- Special nickel chrome alloy plating on cylinder rods leaves smooth surface that does not check or destroy cylinder seals.
- Induction hardening of rods is deeper than most competitors, providing a more damage-resistant surface.
- Boom and swing cylinders are hydraulically dampened to reduce end-of-stroke shock loads. Lift-off is instantaneous. Cushioning is progressive.



The boom cylinder and crowd cylinder are linked together at the top of the boom assembly. This allows hydraulic forces created by these cylinders to be transferred only through the mounting pin and not through the entire boom structure. Service, such as removal of cylinder or replacement of hose, is simplified with all cylinders outside of boom structures.



Two heavy double-acting swing cylinders perform backhoe swing functions.

- Barrels are heavy cast iron for extended life.
- Trunnions are cast into cylinder barrel for maximum strength.
- Large cylinder bore provides extra torque for backfilling operations.
- Direct coupling provides precise position control.
- Excellent end-of-stroke hydraulic dampening slows boom swing momentum and prevents damage to structures as the end of the swing arc is approached.

MAINFRAME AND TRACTOR MOUNTING

The mainframe of the backhoe provides a sturdy and stable platform from which the backhoe can perform its tasks.



The main platform is designed for durability and fit to the tractor unit.

- Laser cut and robotically welded.
- Top and bottom decking of heavy 1/2-in. (12 mm) plate.
- Mid-mounted strengthening plate and internal gussets provide exceptional rigidity to box frame.
- Heavy stabilizer mounting gussets.
- Base sits off the ground with access holes for forklift tines so unit can be transported when off the tractor.

The backhoe can be easily removed for the tractor unit, making it available as a general purpose utility tractor to complete a variety of other tasks.



The backhoe is mounted to the tractor subframe by means of two lower mounting dowels and two upper removable pins.

Removal of the backhoe is accomplished following these steps:

- 1) Lower stabilizers to approximately 12-in. above surface and raise back of tractor up slightly using backhoe boom with bucket lower back parallel with ground.
- 2) Remove retaining pin and then mounting pin from subframe boss on each side.
- 3) Actuate the boom control (boom raise action) to rock the backhoe mainframe away from the tractor. Actuate the stabilizer controls to lift the backhoe frame slightly (2-in.) until the backhoe mainframe lower pins clear the subframe lower hooks.
- 4) Drive slightly forward until the mainframe clears the lower subframe.
- 5) Lower the backhoe to the ground and fold stabilizers up to transport position if desired. Turn tractor off and disconnect backhoe hydraulic supply and return lines. Connect tractor hydraulic lines together and backhoe hydraulic lines together.

This procedure would be reversed to reconnect the backhoe.

BACKHOE BUCKET MOUNTING SYSTEMS

The 110 TLB backhoe comes standard with a pin-on bucket mounting system. This provides an economical method of mounting the bucket where customers do not have to change bucket sizes or backhoe implements very often.

- Buckets are mounted with pins through eyes in the bucket hangers.
- Bucket eyes have grease zerks to promote long wear and quiet operation.
- Bucket mounting pins are allowed to rotate with bucket action.
- Heavy cotter pin retainers make removal of pins or changing of buckets much easier than with snap ring systems, particularly if the operation must be done in the field.

A quick-couple bucket mounting system is available for the 110 TLB backhoe as an option with select buckets.



This bucket coupling system allows the operator to change backhoe buckets or implements quickly and easily in a matter of minutes.

- Simple design with few parts.
- Allows buckets to be attached without lifting to fit and without difficulty in aligning mounting holes.
- Locking wedges hold bucket firmly.
- Easy, single-bolt removal with 24 mm wrench.
- Safety retaining clips assure that bucket will not be lost should it become loose.
- Compact mounting system provides same bucket digging forces as similar pin-on buckets.

This bucket quick-couple system is used on the popular John Deere 27ZTS and 35XTS Compact Excavators as well as other equipment in the industry, increasing the ability for customers to utilize buckets and implements that might already be in their fleets.

BACKHOE BUCKETS

A variety of backhoe bucket sizes and styles are available to meet almost all backhoe customers' needs.

Two different bucket types are offered, depending on the bucket mounting system chosen.

- Pin-on buckets offer an economical mounting system for customers who do not have to change buckets or accessories to accommodate various jobs.
- Quick-couple buckets offer a durable mounting system that allows customers to change buckets and accessories in minutes.

All of the backhoe buckets for the 110 TLB have the following features:

- Excavator design with continuously curved backsheet for easy fill and quick and clean dumping of material.
- Backsheet draws in as bucket is curled to reduce bottom wear and friction during digging operation.
- Heavy-duty bucket hangers continuously welded to bucket body for strength.
- Thick, round top cross tube effectively transmits curling force to side plates, adding durability with minimum weight.
- Cutting edges and side cutters are 1045 high-carbon steel for long life.
- Rear wear strips or double bottom for additional durability for primary digging buckets.

Note: Clean-out buckets do not have double-wall bottoms.

- High-carbon replaceable digging teeth on digging buckets.



The 12-, 18-, and 24-in. pin-on buckets have been specifically designed for digging.

- 12-in. bucket ideal for narrow trenching operations.
- Heavy replaceable bucket teeth aid digging in difficult situations.



The 30- and 36-in. pin-on backhoe buckets have been specifically designed for use in removing soft or light material. They are not recommended for hard digging conditions.

- Higher volume capacity.
- Smooth cutting edge without teeth to leave smooth trench surface.
- Do not have double backsheets for weight reduction.



Four sizes of quick-couple backhoe buckets provide operator the ability to more exactly match trenching requirements. These buckets have been designed to dig in all conditions.

- 12-in. bucket is ideal when a narrow trench or minimum ground disturbance is desired.
- 16-in. bucket is available for use when an 18-in. overall trench width is desired.
- 20- and 24-in. buckets are available for general excavation.



A 30-in. quick-couple bucket is provided for removal of soft or light materials. This bucket is ideal for cleaning ditches and drains. It does not have digging teeth, so a smooth surface can be left after material removal.

Details for each bucket are contained in the Specifications section.

BACKHOE DURABILITY

A number of steps have been taken to maximize the life of the 110 TLB backhoe.



All high-stress pivot points have replaceable bushings:

- Mainframe to swing casting pivot.
- Boom to swing casting pivot.
- Boom to dipperstick pivot.
- Swing cylinders to frame
- Swing cylinders to swing casting pivot.
- Boom cylinder to swing casting pivot.
- Crowd and bucket cylinder (rod eye end) pivots.

The boom-to-dipperstick and boom-to-swing casting pins are flagged to eliminate free pin rotation. The swing axis top and bottom pins and the swing cylinder rod eye pins are cross-bolted. Even the backhoe mounting pins are oversized to provide a large bearing surface and eliminate wear.

SAFETY EQUIPMENT

Operator and bystander safety was an important consideration in designing the new 110 Tractor Loader Backhoe.

- Construction yellow for high visibility on jobsites.
- Key switch interlock prevents bypass starting.
- Park brake for positive parking.
- Boom lock-up for service.
- Transport or storage locks for backhoe.

A motion (back-up) alarm is included as standard equipment.

- 108 dBA sound level at alarm.
- Also sounds when backhoe repositioning creeper is activated.

A slow-moving vehicle sign kit and tractor horn warning kit are available as field installed accessories.

Operator Station Safety Features

Safety features of the 110 TLB operator's station include:

- Boarding step and rubber floor mat for operator platform.
- Color-coded controls.
- Four-post rollover protective structure meets current OSHA and SAE construction equipment standards.
- Canopy top plate provides falling object protection.
- Retractable seat belt.

A 3-in. retractable seat belt is available as a field installed accessory. This additional strength belt may be required for sale in some states and on some jobsites.

Transmission Safety Features

Safety features of the eHydro™ transmission include:

- The tractor will start with one or both foot pedals depressed, but transmission controls will not activate until both directional pedals first come to a neutral position.
- If one or both foot pedals are depressed and the operator is not in the tractor seat, the unit will not move.
- The creep-to-reposition feature, which allows tractor movement from the backhoe operating position, will not work if the operator is not in a seated position.
- Creep-to-reposition feature restricts travel speed to 2.5 mph.

Rear Power Take-Off Safety Features

Safety features for the fully independent rear PTO include:

- PTO light on dash is illuminated whenever the PTO is engaged.
- PTO neutral start switch prevents starting the tractor with the PTO engaged.
- PTO safety interlock shuts down tractor if operator inadvertently leaves tractor seat with PTO in operation.
- Large PTO shield protects output shaft when not in use but allows room to easily hook up implement drive shafts.

Vehicle Lighting Safety Features

Safety features for operation during nighttime or on roadways include:

- All lighting is mounted on the canopy for best illumination and best visibility during transport.
- Amber turn signal/flashing warning lights for road transport.
- Taillight for road transport.
- Stop light for road transport.

A high-intensity strobe warning light is available as a field installed accessory.

SERVICEABILITY

Engine Service



- The hood lifts to a vertical position, allowing access to engine and hydraulic oil cooling systems, engine coolant reserve reservoir, engine air cleaner, and engine oil dipstick. A radiator pre-screen can be lifted and inspected at the same time.
- The right engine side panel unclips, allowing access to engine oil fill location, fuel filter, and engine oil filter.
- All routine maintenance and inspection of engine components can be performed from the right side of the machine.
- The left side engine panel can be quickly unbolted to allow access to the starter and engine exhaust system.



The battery is conveniently located behind the left side boarding step. The battery box cover is removed without tools by pulling three quick-clip pins. Battery box cover is lockable.

Loader Service

Daily loader service is eased by convenient end-of-pin greasing of pivot pins.

Backhoe Service

Backhoe service can be conducted at ground level.

- Lubricating fittings around swing frame are easy to access, particularly if boom is swung to the side.
- Boom and dipperstick fittings are easy to access when boom is extended horizontally.
- End-of-pin lubrication fittings are used on bucket guide links. Center pin and bushing greasing is used for bucket pivot points that must operate under higher loads with higher probability of contamination during operation.
- The boom hydraulic cylinder is outside of the boom structure, simplifying inspection, removal, or replacement of hoses if necessary.

EQUIPMENT FOR BASE MACHINE

TRACTOR

Engine:

4-cylinder liquid-cooled diesel engine	X
Direct fuel injection	X
Air heater starting aid	X
Neutral start switch	X
Auto-bleed self-priming fuel system	X
Key engine start and shutoff	X
Dry-type air cleaner with safety element	X
Dash-mounted air restriction indicator	X
Fully enclosed engine and muffler	X
Side exit exhaust	X
Engine side panels	X
Fuel/water separator	X

Cooling System:

Shipped with anti-freeze	X
Coolant recovery system	X
Sealed radiator compartment	X
Removable radiator screen	X
Steel hydraulic oil cooler	X

Transmission (Powertrain):

eHydro™ electronically controlled hydrostatic drive	X
3-range speeds.	X
Load sensing output speed.	X
Dual pedal foot controls.	X
Creeper repositioning from backhoe operating position	X
Final drives	X
Inboard planetary final drives.	X
Foot-actuated differential lock.	X

Brakes:

Mechanical wet disk brakes	X
Individual rear wheel brake	X
Hand-actuated parking brake	X

Hydraulics:

Open-center hydraulic system	X
Crankshaft-driven main hydraulic pump	X
Dedicated power steering pump and system	X
Suction-side oil filtration	X
Pressure side bypass system relief	X
Electric backhoe presence flow diverter switch	X
O-ring face seal line and hose connectors	X
Electrically controlled third hydraulic function	Factory Option
Third auxiliary hydraulic function	Factory Option
Rear tractor hydraulic functions	Factory Option

Rear Tractor Power Take-Off (PTO):

Fully independent operation	X
Wet clutch engagement	X
Wet clutch brake	X

Rockshaft, Hitch, and Drawbar:

Internal control valve with position control	X
Rear rockshaft	X
Rockshaft rate of drop / stop valve	X
Category 1 manually adjusted three-point hitch	Field Option
Category 1 hydraulically adjusted three-point hitch	Field Option

Operator Station:

Left side boarding step	X
Left and right side fender handrail	X
Isolated foot platform	X
Thick rubber floor mat	X
Rollover dual position high-back seat	X
Color-coded operator controls	X
T-shaped joystick handle	X
Soft touch steering wheel	X
Rear-mounted hand throttle	X
Cup holder	X
Rugged polyethylene canopy	X
Toolbox built into left-hand fender	X
ROPS structure step and handholds	X

Safety Equipment:

Four-post Roll-Gard ROPS	X
ROPS structure step and handholds	X
Canopy FOPS protection sheet	X
Retractable seat belt	X
Transmission operator presence system	X
Transmission presence system for backhoe operator platform	X
Power take-off operator presence system	X
Motion (backup) alarm	X
Lockout for SCV control	X
High-mount canopy lighting	X
Clear forward operational lights	X
Amber hazard warning lights	X
Red stop/taillights	X

Front Drive Axle:

Bevel gear drive	X
Four pinion differential	X
Centered and shielded driveline	X
Mechanical engagement	X

Steering:

Hydrostatic power steering	X
Protected steering cylinder and tire rods	X

Subframe:

Integrated full length of tractor	X
Rear members mounted over rear axle	X

Instrumentation (Side-Mounted):

Right side panel location	X
Tachometer (engine rpm indicator)	X
Engine oil pressure indicator light	X
Digital hourmeter	X
Engine coolant temperature warning light	X
Alternator/battery charging indicator light	X
PTO engagement light	X
Park brake engagement light	X
Auxiliary hydraulic function indicator light	Factory Option
Air heater (cold start) indicator light	X
Warning flasher / turn signal indicator light	X
Air restriction light indicator	X
Hydraulic oil temperature gauge	X
Transmission diagnostic light	X

Electrical:

Wet battery (650 CCA, 120 minutes reserve capacity)	X
12 volt electrical system	X
Key ignition starter	X
Lockable battery compartment	X
40 amp alternator	X
55 amp alternator	Factory or Field Option

Lighting (Canopy-Mounted):

Lights recessed into canopy body for protection	X
Two canopy-mounted front clear halogen work lights	X
Four canopy-mounted amber flashing warning lights	X
Two red canopy-mounted stop tail lights	
Two canopy-mounted rear clear halogen work lights	Factory or Field Option

Miscellaneous:

Crosslink polyethylene grille shell	X
Extreme PolyPro™ damage-resistant tilt-up hood	X
Molded engine side panels	X
Molded fuel tank	X
Molded rear fenders	X
Integral grille guard	X
Front and rear transport tie-down locations	X

Tires for Four Wheel Drive:

7-gauge steel wheel rims	X
Steel valve stem guards	X
Tire bead rim shield protector	X

Front Tires

10x16.5, 8 PR Front (R4 Industrial - single position).	X
10x16.5, 8 PR Front (R3 HD Turf -single position).	Factory Option

Rear Tires

17.5Lx24, 8 PR Rear (R4 Industrial - single position).	X
17.5Lx24, 8 PR Rear (R3 HD Turf - single position).	Factory Option

LOADER

Ductile cast iron loader masts	X
Loader masts integrated to rear subframes	X
Skid steer loader front mounting plate	X
Single-lever joystick control	X
Series pattern boom spool in SCV	X
Bucket anti-rollback devise	X
Mid-mast loader supports	X
Replaceable boom pivot bushings	X
Anti-rotation pivot pins	X
End of pin loader greasing	X
Four link bucket attachment	X
Cast iron mounting plate latch pawls	X

BACKHOE

Backhoe removable from tractor seat	X
Long stick backhoe controls	X
Main control valve below operator platform	X
Curved boom design	X
Narrowed boom design	X
Closed boom design	X
High-strength low-alloy steel construction	X
Cast iron swing frame	X
Cast iron reversible stabilizer feet	X
Cordura sheathed hoses at flex points	X
Thick wall steel hydraulic tubing	X
Replaceable bushings	X
Anti-rotation pivot pins	X
Power link bucket attachment linkage	X
Nickel chrome-plated cylinder rods	X
Friction-welded cylinder rod ends	X
Seventh function backhoe auxiliary hydraulics	Factory or Field Option
Backhoe bucket quick-coupler	Factory or Field Option
Solid rubber stabilizer foot pads	Factory Option

BASE MACHINE AND OPTIONAL EQUIPMENT CODES

Code	Description
BASE MACHINE	
111BLV	110 Tractor Loader Backhoe
TIRES	
<i>Note: All tires offered are bias ply construction.</i>	
4800	10x16.5, 8 PR Front (R4 Industrial - single position)
	17.5Lx24, 8 PR Rear (R4 Industrial - single position)
4810	10x16.5, 8 PR Front (R3 HD Turf Special - single position)
	17.5Lx24, 8 PR Rear R3 HD Turf Special - single position)
ALTERNATOR	
5000	40 Amp Alternator
5001	55 Amp Alternator
HYDRAULICS	
7010	Loader Two-Function Control Valve with Single Lever Control
7020	Loader Three-Function Control Valve with Single Lever Control
7030	Loader Three-Function Control Valve plus Three-Function Rear Outlet Valve with Single Lever Control
LOADER BUCKETS	
8000	Quick-Coupler 72-in. Front Loader Standard Bucket
8010	Quick-Coupler 72-in. Front Loader Heavy-Duty Bucket with Replaceable Cutting Edge
8020	Quick-Coupler 72-in. Front Loader Heavy-Duty 4-in-1 M/P Bucket
	<i>Note: Requires Code 7020 or 7030.</i>
8095	Quick-Coupler Mount less Loader Bucket
BACKHOE	
8200	Six-Function Standard Dipper Stick Backhoe
8220	Seven-Function Standard Dipper Stick Backhoe with Auxiliary Hydraulic Lines
8295	Less Backhoe
	<i>Note: Requires 1250 lb. Rear Implement for Tractor.</i>
BACKHOE BUCKETS	
8400	12-in. HD Pin-On Backhoe Bucket 3 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8405	18-in. HD Pin-On Backhoe Bucket 4 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8410	24-in. HD Pin-On Backhoe Bucket 4 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8415	30-in. HD Pin-On Backhoe Bucket Smooth Cutting Edge
	<i>Note: Requires Code 8200 or 8220</i>
8420	36-in. HD Pin-On Backhoe Bucket Smooth Cutting Edge
	<i>Note: Requires Code 8200 or 8220</i>
8450	12-in. HD Quick Couple Bucket with Mechanical Quick Coupler 3 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8455	16-in. HD Quick Couple Bucket with Mechanical Quick Coupler 3 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8460	20-in. HD Quick Couple Bucket with Mechanical Quick Coupler 4 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8465	24-in. HD Quick Couple Bucket with Mechanical Quick Coupler 4 Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8470	30-in. HD Ditch Cleaning Quick Couple Bucket with Mechanical Quick Coupler No Digging Teeth
	<i>Note: Requires Code 8200 or 8220</i>
8495	Less Backhoe Bucket

ATTACHMENTS

REAR WORK LIGHT KIT



Provides light to rear of tractor for evening work.

Two 55-watt halogen lights mounted near center of canopy. Mounting recesses into canopy to provide additional protection for lights. Lights swivel and tilt slightly to adjust illumination to work area.

Kit contains two lights and mounting hardware

Allow one-half hour to install

Note: 55 Amp alternator (Option Code 5001) is recommended for applications where lights will be used for extended periods while the tractor is a low engine speed.

Code	Bundle	Description
9052	LVB25354	Rear work light group (two lights)

RUBBER STREET PAD KIT



Solid rubber street pads are available as a factory installed option. Pads are also available individually through Parts.

These pads are highly recommended to reduce surface damage if the machine is operated on any asphalt or concrete surfaces. The solid rubber surface provides exceptional wear and additional traction when digging while unit is on slick or finished surfaces. Pads mount on the flat side of reversible cast stabilizer feet

Code	Bundle	Description
9054		Rubber street stabilizer pads (four, installed)

FRENCH CANADIAN OPERATOR'S MANUAL AND DECALS

Required for sale into the Province of Quebec.

Code	Bundle	Description
9000	LVB25482	French Canadian operator's manual and decals

SPANISH LANGUAGE OPERATOR'S MANUAL AND DECALS

Spanish language operator's manual available for spanish dialect operators. Also includes spanish language decals where required.

Note: Regular operator's manual is English language only.

Code	Bundle	Description
	LVB25483	Spanish language operator's manual

**ATTACHMENTS FOR FIELD
CONVERSION**

**TRACTOR ATTACHMENTS/
ACCESSORIES**

3-INCH RETRACTABLE SEAT BELT



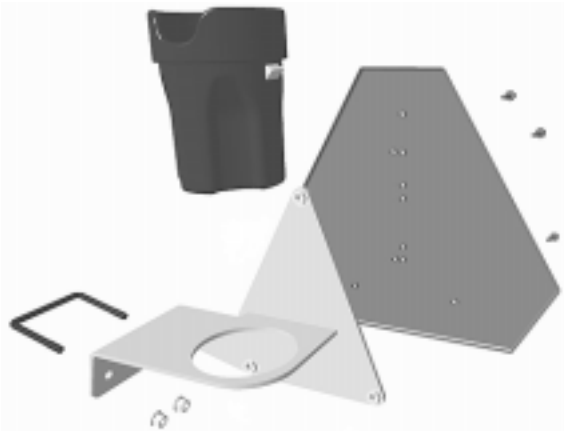
3-in. seat belt is a requirement for sales into a few areas (British Columbia). It may also be a requirement to for sales to some governmental agencies or for some construction applications.

This kit provides a replacement seat belt system to meet these requirements. It includes a seat belt with retractor mechanism and necessary mounting hardware

Allow one-half hour for installation.

Bundle	Description
LVB25352	3-in. retractable seat belt

SLOW MOVING VEHICLE SIGN



This kit is recommended for installation on the TLB where it will be driven or operated on roadways.

This kit provides a slow moving vehicle sign that mounts outboard of the left rear ROPS post above the fender. The mounting bracket contains a rubber cup holder which is easily accessible from the backhoe operating position

Allow fifteen minutes for installation.

Bundle	Description
LVB25353	Slow moving vehicle sign kit

TRACTOR DRAWBAR HITCH ASSEMBLY



Allows the TLB to be equipped to pull implements using a standard drawbar.

Consists of drawbar and related mounting parts.

- Two drawbar positions.
- Can allow swinging for tighter turns with implement.

Allows one hour for installation.

Bundle	Description
LVB25359	Tractor drawbar hitch assembly

TRACTOR HORN WARNING KIT



Manually actuated warning horn. May be a requirement for some governmental agencies.

Kit consists of horn, mounting hardware, actuation button and wiring pigtail which plugs into tractor wiring harness. Actuation button is located on dash.

Allow one hour for installation.

Bundle	Description
LVB25360	Tractor horn warning kit

SPARK ARRESTING EXHAUST GROUP

Reduces chance for emission of hot spark from exhaust. Meets USDA Forest Service Standard 5100-1a. Required for sale in some states and in some applications. Recommended for applications where unit will be operated near combustible material.

Kit consist of new exhaust pipe and mounting hardware.

Allow one half hour for installation.

Bundle	Description
LVB25425	Spark arresting exhaust group

HIGH INTENSITY STROBE WARNING LIGHT

High intensity warning light. Required by some governmental agencies and on some jobsites. Provides increased visibility of unit when operated on or near roadways.

Consists of rotating warning light in amber case, mounting hardware, and wiring harness. Mounts at rear top of canopy. Wires into lighting system to operate when flashing warning lights are operated.

Allow two hours for installation.

Bundle	Description
LVB25426	High-intensity strobe warning light

LOCKABLE FUEL TANK CAP

Allows fuel tank to be secured.

Consists of replacement fuel cap and two keys.

Note: Keys do not match ignition key switch.

Bundle	Description
AL113087	Lockable fuel tank cap (Parts)

ENGINE COOLANT HEATER

Fits into engine block to help provide faster and easier starts in extremely cold weather (below 0°F or -18°C).

Uses 110 volt electricity. Allow one hour to install.

Bundle	Description
AR87167	Engine coolant heater (Parts)

OPERATOR’S MANUAL HOLDER



Provides storage location for 110 TLB operators manual.

Mounts to underside of canopy. Durable polyethylene plastic. Snap closure.

Allow fifteen minutes for installation.

Note: Does not include mounting hardware.

Bundle	Description
RE14246	Operator’s manual holder (Parts)

ADJUSTABLE MIRROR KIT

Adjustable mirrors can be mounted on the left-hand and right-hand fender handrails to give the operator additional safety when operating on public roads.

Each kit contains two mirrors

Bundle	Description
LVB25067	Adjustable mirror kit

REGULAR 3-POINT HITCH



This kit provides regular manual adjustment 3-point hitch components for installation on the 110 TLB rockshaft lift arms. With the backhoe removed, this allows the tractor unit to be used for a variety of tasks which can be completed using rear mounted implements.

This hitch can be installed on tractor in minutes using attachment pins provided.

- Lift link and drag link ends are secured to tractor mounting pins using quick over-center cinch pins.
- Stabilizer bar is attached to lower subframe castings using pin and roll-clip.
- Top link is secured to tractor using staked pin and quick over-center cinch pin.

Hitch is adjustable to aid in attaching and properly adjusting rear implements.

- Right side lift link and center link have turnbuckle style adjustment to extend or retract to adjust length.
- Sway bars have pin adjustment to regulate side-to-side sway of implement.



Hitch lift arms have a lateral float feature which allows the draft arms to raise and lower slightly, independent of each other.

- Eases hookup of rear implements particularly on uneven ground.
- Allows rear implements to follow ground contours. Helps to avoid implement damage when operating on rough or rocky ground.
- Locked and unlocked simply by rotating special pin and bushing. Pin is secured with cinch pin for quick change.

Note: Hitch is shipped on pallet in two boxes. Shipping weight is approximately 153 lbs. (70 kg). Hitch components do not have a storage location on tractor or backhoe unit. Hitch cannot be shipped with TLB unit.

Bundle	Description
LVB25339	Regular 3-point hitch

HYDRAULIC ADJUST TOP AND TILT 3-POINT HITCH



This kit provides 3-point hitch components that can be hydraulically adjusted for installation on the 110 TLB rockshaft lift arms. With the backhoe removed, this allows the tractor to be used with rear mounted implements, and the implement to be pitched or tilted hydraulically.

Note: *Installation of this kit requires the TLB to be equipped with factory option Code 7030 to provide rear tractor hydraulic functions and outlets. A field installed kit to provide these functions will not be available.*

This hitch can be installed on the tractor in minutes using attachment pins provide, in the same manner as the regular 3-point hitch.

Hitch components can be hydraulically adjusted during operation of the tractor.

- Hydraulic cylinder for top link provides the ability to adjust the pitch of a rear implement. This is particularly useful when using the TLB with a box blade for backblading or material movement operations.
- Hydraulic cylinder for left side lift link provides the ability to adjust the tilt of a rear implement. This is particularly useful when using the TLB with a box blade or rear blade to contour or grade landscape areas.

These adjustments can be made when the TLB is in motion, allowing the operator to perform detailed grading tasks with ease. All hitch adjustments other than rockshaft lift are controlled using the T-handle SCV lever. This hitch also makes attachment of rear implements, particularly heavy implements, much easier, since hitch components can be repositioned easily.

Notes:

- 1) *Hitch is shipped on pallet in two boxes. Shipping weight is approximately 202 lbs. (92kg). Hitch components do not have a storage location on tractor or backhoe unit. Hitch cannot be shipped with TLB unit.*
- 2) *Requires Code 7030, Three-Function Loader Hydraulic Valve with Rear Hydraulic Outlets.*

Bundle	Description
LVB25340	Hydraulic adjustment top and tilt 3-point hitch

LOADER ATTACHMENTS/ACCESSORIES STANDARD-DUTY FRONT BUCKET



An economical standard-duty bucket is available for field installation or OE bucket replacement. Details of bucket features can be found in the Loader Implement Options section of the TLB sales manual.

This bucket is recommended for light to moderate duty applications. It does not include a bolt-on replaceable cutting edge.

Note: *This bucket will ship from Quad-Cities warehouse location.*

Bundle	Description
LVB25341	72-in. quick-couple standard-duty front bucket

HEAVY-DUTY FRONT BUCKET



A general purpose heavy-duty bucket is available for field installation or OE bucket replacement. Details of bucket features can be found in the Loader Implement Options section of the TLB sales manual.

This bucket is recommended for moderate to severe duty applications. It includes a bolt-on reversible and replaceable cutting edge.

Note: Note: This bucket will ship from Quad-Cities warehouse location.

Bundle	Description
LVB25342	72-in. quick-couple heavy-duty front bucket

MULTI-PURPOSE 4-IN-1 FRONT BUCKET



A multi-purpose or “4-in-1” front bucket is available for field installation or OE bucket replacement. Details of bucket features can be found in the Loader Implement Options section of the TLB sales manual.

Note: Use of this bucket requires loader three-function control valve be installed on TLB, factory option Code 7020 or 7030. This option cannot be field installed.

This bucket consists of a dozer blade with an hydraulically actuated bucket jaw. This bucket allows the operator to perform a number of functions such as bulldozing, scraping, clamping and lifting material, loading, and precise metering of material as the bucket jaws are opened. It does not include a bolt-on replaceable cutting edge on either the dozer or bucket edge.

Note: This bucket will ship from Quad-Cities warehouse location.

Bundle	Description
LVB25343	72-in. quick-couple multi-purpose front bucket

UTILITY FRONT BUCKET



A utility or light materials front bucket is available for field installation or OE bucket replacement. Details of bucket features can be found in the Loader Implement Options section of the TLB sales manual.

This bucket is recommended for efficient movement of light or high volume materials (less than 75 lbs./cubic foot or 1.22 kg./cubic liter). At 84-in., it is one foot wider than the standard buckets. It also has a slightly higher and longer profile. It does not include a bolt-on replaceable cutting edge.

Note: This bucket will ship from Quad-Cities warehouse location.

Bundle	Description
LVB25345	84-in. quick-couple utility front bucket

BOLT-ON CUTTING EDGE

Recommended for applications involving heavier work or material removal from hard surfaces. Made from high wear 1055 steel. Significantly strengthens bucket edge for additional durability and wear under heavier use. Consists of two edges: can be flipped to use reverse edge for longer useful life.

Edge retained by 7 plow bolts (order PB750225 for box of 60). Cutting edge holes size 3/4 inch (19mm).

Note: Does not include mounting hardware.

Bundle	Description
T32742	72-in. bolt-on cutting edge (Parts)

BACKHOE ATTACHMENTS/ ACCESSORIES

BACKHOE BUCKETS

A variety of backhoe bucket sizes and styles are available to meet almost all backhoe customer needs. Details of bucket features can be found in the Backhoe Buckets section of the TLB sales manual.

Two different types of buckets are offered, depending the bucket mounting system chosen.

PIN-ON BUCKETS

Pin-on buckets offer an economical mounting system for customers who do not have to change buckets or accessories to accommodate various jobs

12-INCH PIN-ON BACKHOE BUCKET



A 12-in. pin-on backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for narrow trenching requirements or very hard digging requirements. Three hardened replaceable digging teeth assist digging in hard soils.

Note: This bucket ships from Quad-Cities Warehouse location.

Bundle	Description
LVB25347	12-in. pin-on backhoe bucket

18-INCH PIN-ON BACKHOE BUCKET



An 18-in. pin-on backhoe bucket is available for field installation or as an additional bucket for customer. This is an excellent general purpose bucket for trenching or digging in hard soils. Four hardened replaceable digging teeth assist digging action.

Note: This bucket ships from Quad Cities Warehouse location.

Bundle	Description
LVB25348	18-in. pin-on backhoe bucket

24-INCH PIN-ON BACKHOE BUCKET



A 24-in. pin-on backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for general purpose excavation requiring efficient removal of a volume of material. Five hardened replaceable digging teeth assist in breaking through harder soil.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25349	24-in. pin-on backhoe bucket

30-INCH PIN-ON BACKHOE BUCKET



A 30-in. pin-on backhoe bucket is available for field installation or as an additional bucket for customer. This bucket has been specifically designed for removal of soft or loose material. It should not be used for hard digging requirements. No digging teeth are provide to leave a smooth excavated surface.

Note: Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25350	30-in. pin-on backhoe bucket

36-INCH PIN-ON BACKHOE BUCKET



A 36-in. pin-on backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for removal of soft or loose material, such as clearing of drains and waterways. It should not be used for hard digging requirements. Bucket design provides the highest volume capacity. No digging teeth are provide to leave the excavated surface smooth.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25351	36-in. pin-on backhoe bucket

**QUICK-ATTACH BACKHOE
BUCKETS**

Quick-couple buckets offer a durable mounting system that allows customers to change buckets and accessories in minutes.

Note: Attachment of these buckets require the backhoe to be equipped with backhoe bucket quick-coupler interface either through factory or field installation.

**12-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE
BUCKET**



A 12-in. quick couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for narrow trenching requirements or very hard digging requirements. Three hardened replaceable digging teeth assist digging in hard soils.

Note: Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25461	12-in. heavy-duty quick-attach backhoe bucket

**16-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE
BUCKET**



A 16-in. quick couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for detail trenching. Three hardened replaceable digging teeth assist digging in hard soils.

Note: This bucket ships from Quad Cities Warehouse location.

Bundle	Description
LVB25462	16-in. heavy-duty quick-attach backhoe bucket

20-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE BUCKET



A 20-in. quick couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is an excellent general purpose trenching and excavating bucket. Four hardened replaceable digging teeth assist digging in more difficult situations.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25463	20-in. heavy-duty quick-attach backhoe bucket

24-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE BUCKET



A 24-in. quick couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is an excellent general purpose excavating bucket where a volume of material needs to be moved. Four hardened replaceable digging teeth assist digging in more difficult situations.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25464	24-in. heavy-duty quick-attach backhoe bucket

30-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE BUCKET



A 30-in. quick couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is an excellent excavating bucket where a volume of material needs to be moved efficiently. It is not recommended for hard digging conditions. Five hardened replaceable digging teeth assist in breaking out material.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25465	30-in. heavy-duty quick-attach backhoe bucket

36-INCH HEAVY-DUTY QUICK-ATTACH BACKHOE BUCKET

A 36-in. quick-couple backhoe bucket is available for field installation or as an additional bucket for customer. This bucket is excellent for removal of soft or loose material, such as clearing of drains and waterways. It should not be used for hard digging requirements. Bucket design provides the highest volume capacity. No digging teeth are provide to leave the excavated surface smooth.

Note: This bucket ships from Quad-Cities warehouse location.

Bundle	Description
LVB25466	36-in. heavy-duty quick-attach backhoe bucket

MISCELLANEOUS BACKHOE ATTACHMENTS

BACKHOE BUCKET MECHANICAL QUICK COUPLER INTERFACE



Converts pin-on bucket attachment to quick couple bucket attachment.

Note: Requires use of quick-couple backhoe buckets. Pin-on backhoe buckets cannot be used with this bucket attachment system.

This system will allow operators to change backhoe buckets to more closely meet job requirements in just minutes. Simple mechanical wedge locking mechanism with few parts. Single tool (24mm wrench) required for bucket removal and reinstallation.

Note: This bundle will ship from Quad-Cities warehouse location.

Bundle	Description
LVB25439	Backhoe bucket mechanical quick-coupler interface

22-INCH HYDRAULIC CLAMP (THUMB)



Provides a hydraulically actuated jaw or thumb, which mounts on the backhoe dipperstick.

Note: Requires backhoe factory Code 8220, backhoe seventh function auxiliary hydraulics. Compatible only with factory-provided quick-couple backhoe buckets.

Allows a jaw to be closed against bucket face to grip and hold material. Extremely useful when loading out demolition materials using backhoe, or for craning articles using backhoe boom.

Allow two hours for installation.

Note: Compatible only with Factory Option Quick Coupler Backhoe Buckets Codes 8450 through 8470. Not recommended for use with 12-in. buckets. Ideal for use with 16-, 20-, and 24-in. quick couple buckets made in Canada (see identification plate on bucket). Cannot be installed with pin-on buckets. Installation requires welding of mounting plates on dipperstick surface.

Bundle	Description
LVB25440	22-in. hydraulic clamp

QUICK-COUPLER BRUSH RAKE ATTACHMENT

Tined grapple attachment for use with Hydraulic Clamp. 22-in. wide. Allows gathering of material which would be hard to get into backhoe bucket and reduction of dirt when moving or loading plant material.

Note: For use with hydraulic clamp (thumb).

Bundle	Description
LVB25441	Quick-coupler brush rake attachment

SOLID RUBBER STABILIZER FOOT PAD

Single stabilizer foot pad. Solid rubber. Reduces damage when operating on finished or slick surfaces such as asphalt or concrete.

Note: Does not include mounting hardware.

Bundle	Description
LVA12133	Solid rubber stabilizer foot pad (Parts)

BACKHOE STABILIZER CYLINDER GUARDS



Provides additional protection for stabilizer cylinders, rods, and hydraulic fittings during operation, particularly in rocky terrain or when digging around debris.

Consists of heavy plate guards for each side stabilizer. Mount to backhoe foot rotating pin.

Allow one hour for installation.

Bundle	Description
LVB25356	Backhoe stabilizer cylinder guards

REFERRAL ATTACHMENTS/ ACCESSORIES

Note: All warranty, repair parts, technical support and assistance and sales support and assistance for the following items will be the responsibility of the Referral Attachment Supplier and will be handled directly between the Dealer and the Supplier.

TRACTOR HEAVY-DUTY BOX BLADE



A heavy-duty box blade is available for use with the 110 TLB when the backhoe is removed. This implement will be particularly useful to landscape contractors and finish graders.

Note: Attachment of this implement requires a field installed 3-point rear tractor hitch. This implement includes hydraulically actuated scarifier blades, which require rear tractor auxiliary hydraulic outlets to control. It is highly recommended that this implement be used with Hydraulic Adjust Top and Tilt 3-Point Hitch Kit. It is highly recommended that this implement be used on tractors equipped with Three-Function Loader Control with Electric Diverter Valve and Rear Tractor Outlets, factory Code 7030. Rear tractor hydraulic outlets cannot be field installed.



This is a high capacity construction grade box blade specifically matched to the John Deere 110 TLB:

- When attached to 110 TLB, weight provides sufficient ballast to properly conduct loading operations.
- 84-in. width provides good overlap of tire treads and allows the operator to blade close to building and foundations reducing the need for manual cleanup.
- High back provides plenty of carrying capacity for quick movement of material.
- Heavy open box construction without gussets provides clear view of cutting edges and box contents.



Standard equipment for this box blade includes hydraulically lifted scarifiers.

- Scarifier bar hydraulically lifted and set allowing for quick conversion from ground breaking to blading and back.
- Heavy tubular scarifier bar raises high above box area to keep teeth clear of debris and provide a clear view of cutting edges and box content.
- Strong scarifier shanks with hardened replaceable scarifier teeth.
- Quick adjustment clips on scarifier teeth allow for height adjustment for chipping or deep chiseling.
- Mechanical lock in down position to provide extra strength and durability in hard soil conditions.



This box blade features highest quality cutting edges and tailgate.

- Hardened surface double beveled for long life.
- Reversible and interchangeable front to rear.
- Hinged tailgate is adjustable for fine or heavy grading.



This box blade has a universal hitch to allow attachment to other tractors which may be in customers fleet.

- Hitch pin slides through mounting plates eliminating the need to loosen and re-adjust hitch sway bars.
- Inside channel fits ASAE Category I hitch balls, outside channel fits ASAE Category II hitch balls.
- Hitch pin slides to side to ease implement hookup and removal.

This item may be ordered through the John Deere system using the following bundle number.

Note: This item available from:

Frontier Equipment
11145 Thompson Ave.
Lenexa, Kansas 66219
1-866-222-6151
www.frontiermarketplace.com

Bundle	Description
BB1284	84-in. heavy-duty box blade with hydraulic scarifiers

Jun. 03 Litho in U.S.A.

TRACTOR ROUGH SERVICE PROTECTION PAN



A heavy-duty pan is available to provide additional protection to tractor components.

This protective pan is recommended:

- Where the tractor has factory installed third-function SCV valve with electric diverter (Code 7030).
- Where the tractor will be operated in/around brush or debris.

This pan mounts below the tractor transmission case between the left and right rear subframes. Features of this protective pan are:

- Constructed of heavy 1/4-in. (6.3 mm) thickness steel.
- Formed and welded edges for additional strength.
- Angled leading edge helps push brush and debris below the tractor when encountered.
- Recessed mounting bolts to provide smooth bottom surface that does not catch and retain debris.
- Access doors to allow routine servicing of tractor components.

Allow three hours for installation.

Order directly from:

G. R. Manufacturing, Inc.
4800 Commerce Drive
Trussville, Alabama 35173
Phone: (800) 841-8001
Fax: (205) 655-8005

Note: This item will ship directly from G. R. Manufacturing, Inc., Trussville, AL. Approximate shipping weight is 155 lbs. (70 kg).

Bundle	Description
LVB25424	Tractor rough service protective pan

BACKHOE BELL HOLE QUICK ATTACH BUCKET

This bucket allows the customer to create a wide straight-sided trench. These buckets are commonly used by cemeteries.

Note: Backhoe must be equipped with Backhoe Bucket Mechanical Quick Coupler Interface.

This bucket has the following features:

- Quick couple hangers allow easy and clean installation or removal of bucket in minutes.
- Heavy 3/4-in. by 5-in. cutting edge for long wear.
- Strong 1/2-in. wall torque tube at bucket top effectively transfers digging effort to entire bucket.
- Six digging teeth for aggressive digging action. Teeth are top-pinned for easy replacement.
- Large 3.7 cu. ft. (.10 cubic meter) rated capacity.

Order directly from:

C & P Attachments
8822 Apison Pike
Ooltewah, Tennessee 37363-8624
Phone: (800) 433-6404
Fax: (423) 396-3317
Email: c&p@cpbuckets.com

Note: This item will ship directly from C&P Attachments, Ooltewah, TN. Approximate shipping weight is 235 lb. (107 kg).

Bundle	Description
36009E-1	36-in. Bell Hole Bucket for John Deere 110 TLB

BACKHOE HEAVY DUTY RIPPER

This bucket has a single shank for penetrating very hard soils. These buckets are commonly used to open trenches in areas which have considerable frost penetration in the soil during wintertime.

Note: Backhoe must be equipped with Backhoe Bucket Mechanical Quick Coupler Interface.

This bucket has the following features:

- Quick couple hangers allow easy and clean installation or removal of ripper in minutes.
- Single centered hardened steel shank concentrates backhoe digging force on small area.
- Thick 1-inch plate for shank and top provide needed durability.
- 21 5/8 inch shank depth allows operator to break up soil quickly.
- Single heavy duty replaceable digging tooth.

Order directly from:

C & P Attachments
8822 Apison Pike
Ooltewah, Tennessee 37363-8624
Phone: (800) 433-6404
Fax: (423) 396-3317
Email: c&p@cpbuckets.com

Note: This item will ship directly from C&P Attachments, Ooltewah, TN. Approximate shipping weight is 210 lb. (95 kg).

Bundle	Description
005FR	Heavy Duty Ripper for John Deere 110 TLB

OVER TOP SOFT SIDE WEATHER ENCLOSURE

A soft side weather enclosure for the 110 TLB operator station is available.

This enclosure provides economical protection from weather elements and adjustability to varying temperature and conditions. Installation and removal takes only minutes, and is accomplished without tools. No permanent framework or drilling is required.

This enclosure has the following features:

- Constructed of heavy duty 18 oz. reinforced vinyl coated nylon material.
- Top and four sided enclosure provides better sealing than just side enclosures.
- Heavy clear plastic windows provide visibility in all directions.
- Front and back windows are easily removable. Allows the operator to easily adjust enclosure to changing outside temperature and weather conditions
- Outside edges and grommets are reinforced.
- Zippered door openings on both sides using YKK nylon zippers.
- Adjustable stretch cords around bottom make installation quick and easy.

Note: This enclosure is not pressurized. Do not secure the sides down air-tight. Maintain safety checks for carbon monoxide leaks. Exposure to carbon monoxide can cause illness, serious injury, or death. Never use a heat tube with a vinyl enclosure.

Order directly from:

Fremar
 125 Red Lion Road
 Southampton, New Jersey 08088
 Phone: (609) 859-2989
 Fax: (609) 859-3189
 Email: www.fremar.com

Note: This item will ship directly from Fremar, Southampton, NJ. Approximate shipping weight is 29 lb. (13 kg).

Bundle	Description
FVRC110	Over Top Soft Side Weather Enclosure

110 TLB IMPLEMENTS

Equipment	Page Number
Implement Compatibility	C27-300-2
Worksite Pro PA30 Hydraulic Auger	C27-300-3
Worksite Pro HB50 Hydraulic Breaker	C27-300-6
Worksite Pro Rail-Style Pallet Forks	C27-300-9
Referral Equipment.	C27-300-10

IMPLEMENT COMPATIBILITY

John Deere Compact Utility Tractor Implements and Accessories **recommended** for use with the 110 Tractor Loader Backhoe

Operation Using Loader

- Frontier BB1284 84-in. Heavy-Duty Box Blade
- BW14701 Ballast Box
- BW13661 Ballast Box With Extension

Note: Required for loader operation if the backhoe is not installed on tractor unit, to provide adequate rear vehicle weight.

Operation Not Using Loader

- 45 Rear Blade
- 370 and 390 Flail Mowers
- MX6 and MX8 Rotary Cutters
- 620 Integral Disk
- 31C Post Hole Digger
- 670 and 680 Rotary Tillers

Note: Acceptable for use, but does not provide adequate rear vehicle weight.

John Deere Compact Utility Tractor Implements and Accessories that will work but **are not recommended** for use with the 110 TLB

Operations Not Using Loader

- 11 Cultivator
- 25A and 360 Flail Mowers
- 660 Tiller
- 272 Rear Rotary Mower
- 613 and MX5 Rotary Cutters

Note: All other John Deere compact tractor implements and accessories will not work for use with the 110 Tractor Loader Backhoe.

John Deere Skid Steer Loader Worksite Pro™ Implements and Accessories **recommended** for use with the 110 Tractor Loader Backhoe

(All fit on front skid steer loader mounting plates)

- Bale Spear
- Tooth Bar
- Rail and Pin Style Pallet Forks
- Utility and Foundry Bucket
- Scrap, Utility, and Tined Grapples

John Deere Skid Steer loader WorkSite Pro Implements and Accessories allowed for use with 110 Tractor Loader Backhoe

(Operation may not be ideal)

- Planetary and Chain Drive Auger
- Angle and Pickup Broom
- Multi-Purpose Bucket
- Three-Point Hitch
- Rotary Tiller
- Breaker
- Manure, Construction, and Tooth Buckets
- Power Rakes
- Vibratory Roller

Note: All Other John Deere Worksite Pro skid steer loader implements and accessories will not work for use with 110 Tractor Loader Backhoe.

(Do Not Use Skid Steer Loader Backhoes, Cold Planer, or Trencher)

WORKSITE PRO™ PA30 HYDRAULIC AUGER



FEATURES AND BENEFITS:

This hydraulic auger increases the versatility of the 110 Tractor Loader Backhoe package by allowing it to complete even more tasks efficiently for customers. This makes the TLB particularly useful to customers such as fencing contractors for installation of posts and landscape contractors for installation of trees and shrubbery. Attachment of the auger to the backhoe boom allows exact placement of the auger bit over a wide area without continual repositioning. The drilling auger can be maneuvered in the same range as a backhoe bucket. It also allows the operator to drill vertically into sloped terrain.

This hydraulically driven auger has the following features:

- Compact package for easier transport and storage.
- Completely sealed drive components to eliminate damage due to contamination.
- Sealed planetary gears spread torque loads and increase longevity.
- All moving components run in oil for long life with minimal maintenance.
- Rotation can be reversed simply by pushing the backhoe foot control pedal in the opposite direction allowing the operator to quickly back auger bit out when obstructions are encountered.
- A main hydraulic relief valve protects the unit from damage when the auger hits an immovable object.
- Mounting joint is self-plumbing for straight holes in level or sloped terrain.

A selection of auger bits is available to meet many specific job requirements. Features of these bits are as follows:

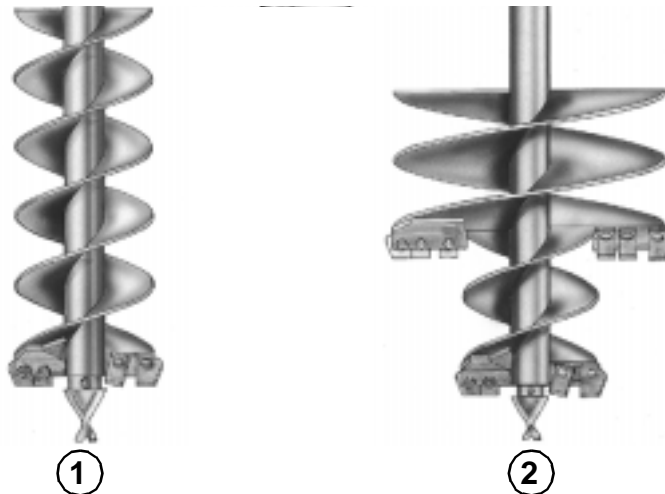
- Hardened bolt-on gage and wisdom teeth.
- Hardened fishtail point.
- Heavy-duty double flighting.
- Thick auger tube wall.

Note: Backhoe must be equipped with seven-function standard dipperstick (Order Code 8220). Backhoe must be equipped with Backhoe Bucket Quick-Coupler Interface.

SPECIFICATIONS

	PA30
Overall Auger Length - in. (mm)	40 (1016)
Overall Auger Height - in. (mm)	21 (533)
Overall Auger Width - in. (mm)	45 (1143)
Maximum Auger Bit Diameter - in. (mm)	36 (914)
Overall Auger Bit Length - in. (mm)	48 (1219)
Minimum Hydraulic Flow - gpm (lpm)	14 (53)
Maximum Hydraulic Flow - gpm (lpm)	30 (114)
Maximum Continuous Operating Pressure - psi (kPa)	3100 (21,374)
Output Shaft - in. (mm)	2 (51) Hex
Output Torque - lb-ft (N•m)	2791 (3784)
Output Speed rpm:	53
Operating Weight without Bit - lb. (kg)	319 (145)

AUGER BITS AND APPLICATIONS



Auger Bit	Application
1. Standard-Duty Bit	For light to moderate ground conditions
2. Tree and Shrub Bit	For tree and shrub planting

BASE MACHINE AND OPTIONAL EQUIPMENT CODES

Code	Attachment Identifier	Description	Shipping Wt. kg (lb.)
BASE MACHINE			
0130LV		Worksite Pro PA30 Planetary Drive Auger, Hex Shaft	
QUICK COUPLER INTERFACE ADAPTER			
1000	LVB25433	Quick Coupler Interface Adapter	80 (36)
1095		Less Quick Coupler Interface Adapter	
AUGER BITS			
2000	LVB25435	6-in. (152 mm) Standard Duty Auger Bit, Hex	40 (18)
2001	LVB25436	9-in. (228 mm) Standard Duty Auger Bit, Hex	86 (39)
2002	LVB25437	12-in. (305 mm) Standard Duty Auger Bit, Hex	115 (52)
2003	LVB25438	24-in. (609 mm) Tree & Shrub Auger Bit, Hex	198 (90)
2095		Less Auger Bit	

Attachments for Field Conversion



A quick coupler interface adapter is required to mount the PA30 Hydraulic Auger to the backhoe boom. The top portion of this interface adapter fits the backhoe bucket quick coupler interface. The swivel mount for the auger fits inside the bottom side plates. Required pins and bushings for this mounting are included in base with the hydraulic auger.

Note: This item ships from Quad Cities Warehouse location. Approximate shipping weight is 80 lb. (36 kg).

Attachment for Field Conversion	Description
LVB25433	Quick Coupler Interface Adapter

WORKSITE PRO HB50 HYDRAULIC BREAKER



This hydraulic hammer allows the John Deere 110 Tractor Loader Backhoe to accomplish many demolition tasks. This implement makes the 110 TLB particularly useful to building contractors who need to remove concrete flatwork or foundations to complete their jobs. Used in combination with the hydraulic thumb attachment, it can accomplish removal and clean up of concrete flatwork quickly and efficiently. For those not familiar with hydraulic breakers, this is the one to get to know.

The Worksite Pro HB50 Hydraulic Breaker is ideal for the 110 Backhoe.

- High power-to-weight ratio to efficiently break through hard surfaces.
- Appropriate weight to reduce rebound back through backhoe structures.
- Slim, compact design works well in narrow trenches and tight demolition applications.
- Multi-fit side plates allow the hammer to be easily fit to other machines in fleet to leverage investment.

This hydraulic hammer uses modern technology to efficiently perform its work without damage to the backhoe.

- Uses the tractor hydraulic system to obtain most of its firing power with the aid of a “gas assist” cycle, rather than a high pressure gas accumulator to obtain firing power.
- A low pressure nitrogen gas chamber cushions firing piston recoil to protect the backhoe during the “rebound” or “cocking” stroke. This results in a significant reduction in shock loads passed through the backhoe structure.
- Fully hydraulic design protects the tractor hydraulic circuit so that no surge-damping accumulators are required.

Field service is simple, with all parts serviceable, unlike some competitors who require component exchange.

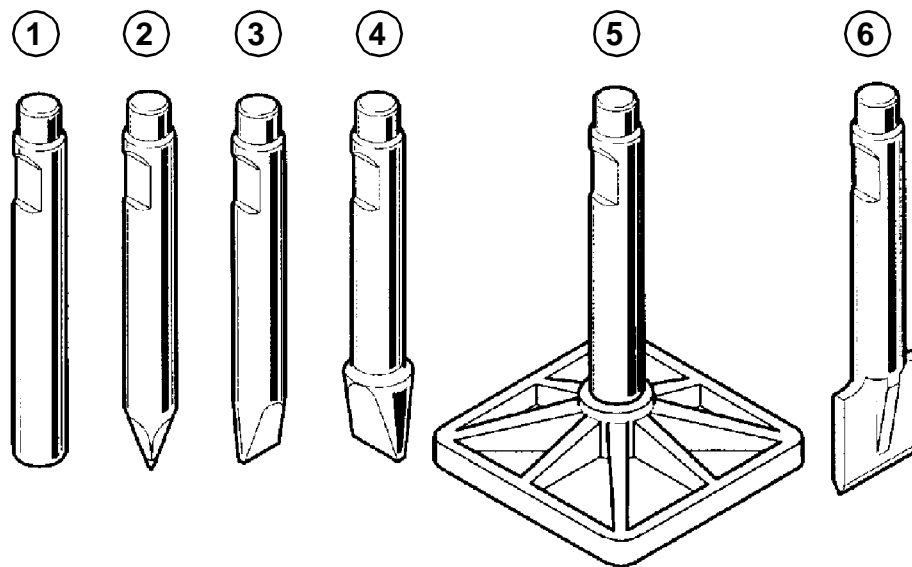
- Dependable performance with only two moving parts.
- Very few seals and no special tools required for repair.
- No diaphragms or plugs in firing head.
- Precision machined and plated components offer long life.

Note: Backhoe must be equipped with seven-function standard dipperstick (Order Code 8220). Backhoe must be equipped with Backhoe Bucket Quick-Coupler Interface. Requires Rear Demolition Protection Screen for operator.

SPECIFICATIONS

	HB50
Impact Energy - lb-ft (N•m)	500 (678)
Blows per Minute	600-1080
Operating Weight - lb. (kg)	540 (245)
Tool Diameter - in. (mm)	2.6 (65)
Total Length - in. (mm)	46 (1168)
Top Outside Width - in. (mm)	10.5 (267)
Width Inside Side Plates - in. (mm)	6.5 (165)
Total Height - in. (mm)	21.5 (546)
Required Oil Flow - gpm (lpm)	6.7–12.0 (25–45)
Nitrogen Gas Pressure - psi (kPa)	140–160(965–1103)
Operating Pressure - psi (kPa)	1430-1850(9860-12755)

HYDRAULIC BREAKER TOOLS AND APPLICATIONS



Breaker Tool	Application
1. Blunt Point	Quarry work, rock breaking
2. Moil Point	Trench work and heavy (152-457 mm / 6-18-in.) concrete removal
3. Chisel Point	Most concrete flat work, walls, around rebar, or breaking to a sawed or pre-cut line
4. Frost Wedge	Frost and some foundry (aluminum and copper) applications
5. Tamping Pad	Primarily packing for clay or granular soil in trenches
6. Asphalt Cutter	Asphalt applications with no rebar or underlying concrete

Breaker Tools - See Parts Index

Breaker Tools	Dimensions in. (mm)	Description
KV17883	2.6 (66.0) diameter	Blunt Point for Worksite Pro HB50 Hydraulic Breaker
KV17882	2.6 (66.0) diameter	Moil Point for Worksite Pro HB50 Hydraulic Breaker
KV18176	2.6 (66.0) diameter	Chisel Point for Worksite Pro H50 Hydraulic Breaker
KV17884	3.5 (88.9) width	Frost Wedge for Worksite Pro HB50 Hydraulic Breaker
KV17885	12 x 12 (305 x 305)	Tamping Pad for Worksite Pro HB50 Hydraulic Breaker
KV17886	6.0 (152.4) width	Asphalt Cutter for Worksite Pro HB50 Hydraulic Breaker

BASE MACHINE AND OPTIONAL EQUIPMENT CODES

Code	Description
BASE MACHINE	
0120LV	Worksite Pro HB50 Hydraulic Breaker with Moil Point
REQUIRED ACCESSORIES	
1000	Quick Coupler Interface Adapter
1095	Less Quick Coupler Interface Adapter

Attachments for Field Conversion



A quick coupler interface adapter is required to mount the HB50 Hydraulic Breaker to the backhoe boom. The top portion of this interface adapter fits the backhoe bucket quick coupler interface. The bottom portion fits inside the side plates of the breaker. Required pins and bushings for this mounting are included in base with the hydraulic breaker.

Note: This item ships from Quad Cities Warehouse location. Approximate shipping weight is 80 lb. (36 kg).

Attachment for Field Conversion	Description
LVB25433	Quick Coupler Interface Adapter

WORKSITE PRO RAIL-STYLE PALLET FORK



Pallet forks are second only to buckets in attachment sales. Pallet forks are a versatile tool that can be used to load and unload pipe, conduit, lumber, brick, stone, and other building materials. The Quik-Tatch mounting allows quick and easy mounting and removal in seconds.

John Deere rail style pallet forks hold the forks in a rigid position. The forks stay fixed in the set position at all times.

- Robust single-piece backrest and unrestricted visibility to the fork tips.
- Forks can be located 203–1016 mm (8–40-in.) wide with 102 mm (4-in.) increments, offering eight positions.

The 10° back angle gives greater pallet fork breakout. The back angle design allows increased rotation of the pallet forks above horizontal.

LOAD RATINGS ON 110 TRACTOR LOADER BACKHOE

	LIFT HEIGHT	LB. (KG)
CAPACITY*	24-in. (610 mm)	2300 (1043)
	48-in. (1219 mm)	2100 (952)
	FULL HEIGHT	1600 (725)

* One-half maximum stable load at MAXIMUM REACH and 610 mm (24-in.) load center.

SPECIFICATIONS

Frame Width with Steps - in. (mm)	53.3 (1353)
Frame Width less Steps - in. (mm)	45.3 (1149)
Frame Height - in. (mm)	40 (1016)
Overall Length - Frame and Fork - in. (mm)	55.3 (1403)
Fork Thickness - in. (mm)	35 (1.4)
Individual Fork Rating - lb. @ in. (kg @ mm).	2094 @ 19.7 (950 @ 500)
Overall Weight - Frame and Fork - lb. (kg)	396 (180)

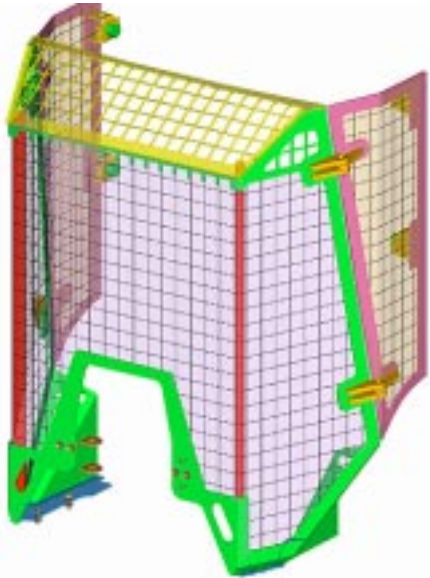
BASE MACHINE EQUIPMENT CODE

Code	Description
BASE MACHINE	
0253KV	48-in. (1219 mm) Rail Style Pallet Forks and Frame

REFERRAL ATTACHMENTS/ACCESSORIES

Note: All warranty, repair parts, technical support and assistance and sales support and assistance for the following items will be the responsibility of the Referral Attachment Supplier and will be handled directly between the dealer and the supplier.

BACKHOE REAR DEMOLITION PROTECTION SCREEN



A screen is required to provide additional operator protection from debris that may be launched from the chisel point during hydraulic hammering action.

Note: The operator must also wear eye protection at all times during operation of the hammer.

Backhoe boom protection plate with hammer point holster.

- Formed frame maintains work area and visibility for operator.
- Allows backhoe removal and reinstallation without removal of the screen from backhoe mainframe.
- Heavy 3/16 -in. wire mesh provides protection for impacts up to 1000 lb.
- Side wing doors increase protection area, yet swing out of the way for installation and removal.
- Allows access to all backhoe functions including boom transport lock releases.

Requires approximately two hours for installation. Requires drilling four mounting holes in backhoe mainframe.

Order directly from:
G. R. Manufacturing, Inc.
4800 Commerce Drive
Trussville, Alabama 35173
Phone: (800) 841-8001
Fax: (205) 655-8005

Note: This item will ship directly from G. R. Manufacturing, Inc., Trussville, AL. Approximate shipping weight is 140 lb. (64 kg).

Bundle	Description
LVB25423	Backhoe Rear Demolition Protection Screen

BACKHOE BOOM PROTECTION PLATE

A backhoe boom protection plate is available.

This plate provides additional protection to the boom structure from possible damage due to curling the hammer point too tightly. It also provides protection to the boom during truck loading operations where the boom might strike the bed of a dump truck.

- Formed and laser cut to fit underside of boom.
- Attached to boom using krem nuts. Attaching points are reinforced.
- Includes pocket to hold hammer bit during storage or transport.
- Hammer pocket has heavy contact plate to avoid damage to plate or boom during transport.

Requires approximately one half hour for installation

Order directly from:
G. R. Manufacturing, Inc.
4800 Commerce Drive
Trussville, Alabama 35173
Phone: (800) 841-8001
Fax: (205) 655-8005

Note: This item will ship directly from G. R. Manufacturing, Inc., Trussville, AL. Approximate shipping weight is 30 lb. (14 kg).

Bundle	Description
LVB25357	Backhoe Boom Protection Plate

SPECIFICATIONS

TRACTOR UNIT

110 Tractor Loader Backhoe

Engine:

Type	Diesel, Direct Injection
Engine Horsepower (kW)—Gross	43 (32.1)
Engine Horsepower (kW)—Net	41 (30.6)
PTO Horsepower (kW)	33 (24.6)
Hydraulic HP (kW)	30.9 (23.1)*
Rated Speed (rpm)	2,600
Number Of Cylinders	4
Total Displacement, cu. in. (Liters)	121.7 (2.0)
Fuel Consumption, 75% Load, Gal/Hr	1.7 (6.6)
Restart	Auto-bleed
Cold Start Assist	Air Preheat Coil

Electrical:

Type	12 Volt
Battery Size (CCA)	650
Alternator Amperes	40 Standard ; 55 Optional
Starter Size, hp (kW)	2.7 (2.0)

Transmission:

Transmission Type	Hydrostatic with Load Sensing System
Transmission Controller	Electronic Using Directional Pedals
Range Speeds	3
Clutch	None
Creeper	Backhoe Repositioning
Creeper Location	Right Hand Console
Range Speeds	3
Max Traveling Speed, mph (kph)	16.1 (26.1)

Steering:

Steering	Hydrostatic Power
Turn Angle	58 Degrees
Turns Lock To Lock	3.5

Power Train:

Front Axle	Mechanical, Bevel Gear
MFWD Engagement	Mechanical, Collar Shift
Front Axle Oscillation	10 Degrees
Front Differential	Cast, Four Pinion Gears
Final Drives	Planetary, Inboard 12 Bolt

Breaks:

Brakes	Wet Disc, Inboard
Actuation	Mechanical
Parking Brake	Automotive Style Lever
Turning Breaks	Individual

Rear Power Take Off:

Type	Fully Independent
Speed, RPM	540 at 2,600 Engine RPM
PTO Engagement	Solenoid Operated Clutch
PTO Clutch	Wet, Multi-disk
PTO Brake	Wet, Multi-disk

Rear Hitch:

3-Pt. Hitch	Field Installed Option
Hitch Category	Category I Standard
Control Type	Position Only
Hitch Lift Capacity @ Link Ends, lb. (kg)	3,130 (1,419)
Drawbar Hitch	Field Installed Option

Tires:

Front Tires (R4 or R3 tread pattern)	10x16.5 8PR
Rear Tires (R4 or R3 tread pattern)	17.5Lx24 8PR
Tread Pattern	Industrial (R4) Standard ; Turf (R3) Optional

Hydraulic System:

Type of System	Open Center
Pumps	3, Gear
Total Flow - gpm (lpm)	23.6 (89.2)
System Operating Pressure, psi (kPa)	3,000 (20,684)
Hydraulic Flow To Loader, gpm (lpm)	12.2 (46.1)
Hydraulic Flow To Backhoe, gpm (lpm)	16.3 (61.5)
Oil Cooler	Steel, thick core, 190 sq. in. (123,024 sq. m m)

TRACTOR UNIT**110 Tractor Loader Backhoe****Capacities:**

Fuel Tank - gal. (l)	15.3 (58)
Crankcase with Filter, gal. (l)	1.25 (4.9)
Cooling System, U.S. gal. (l)	2.4 (9)
Transmission & Hydraulic System - gal. (l)	15.0 (57)
Transmission Case & Filter, gal. (l)	9.7 (37)
Transmission and Hydraulic Oil	HyGard J20C or HyGard J20D Cold Service
Front Axle Gearcase (MFWD Axle) - gal. (l)	1.3 (4.9)

Lighting:

Work lights	2 Standard, Front ; 2 Optional, Rear
Type	55 Watt, Symmetric Illumination
Brake lights	Rear, Canopy Mounted

Safety Equipment /Certification

ROPS	OSHA 1926, 1001; SAE J1040 to 9000 lb.
FOPS	ISO 3449 Level 1
Transmission Operator Presence System	Yes
PTO Operator Presence System	Yes
Backhoe Presence System	Yes

LOADER UNIT**Loader Design:**

Type	Closed Box Construction Style Lift Arms
Control	Single Lever T-Handle Grip
Boom Control Valve System	Series Type
Masts	Ductile Cast Iron, Z-Form Webbing
Boom Bushings	Replaceable
Pin Service	End of Pin Greasing
Bucket Anti-Roll-Back Device	Mechanical
Bucket Quick Coupler	Standard
Bucket Mounting Plates	Skid Steer Loader
Bucket Mounting Plate Area, sq. in. (sq. mm.)	270 (174,193)
Lift Height To Pivot Pin, ft. (mm)	9.6 (2,917)

Loader Performance (SAEJ 732):

Lift Capacity To Max Height, Pivot Pin, lb. (kg)	2,727 (1,237)
Lift Capacity To Max Height, lb. (kg)	2,042 (926)

BACKHOE UNIT**Backhoe Design:**

Construction	Boxed Construction from High Strength, Low Alloy Steel, Robotically Welded
Backhoe Controls	Two Lever, Direct Linkage
Boom Type	John Deere Power Curve Boom, Narrowed
Swing Frame	Cast Iron
Boom And Crowd Cylinder Mounting	In-Line, Pinned
Swing Cylinder Mounting	Cast in Trunions, Cast Iron Mounting
Cylinder Rod Plating	Nickel Chrome
Cylinder Rod Hardness	HRC58
Cylinder Rod End Attachment	Friction Welded
Stabilizer Pads	Cast Iron, Reversible
Bucket Linkage	John Deere Power Link
Swing Lock Mechanism	Lift Pin
Boom Lock Mechanism	Lever Actuated Hook, Rubber Cushioned
Stabilizer Angle Rearward	18 Degree
Boom Swing Arc	180 Degree
Bucket Rotation	190 Degree
Maximum Digging Depth, ft. (mm)	10.1 (3,073)

Backhoe Performance:

Digging Force, Bucket Cylinder, lb. (N)**	5,723 (25,457)
Digging force, Crowd Cylinder, lb. (N)	3,764 (16,743)
Side Swing Force, lb./ft. (kN-m)	7,975 (10.8)
Boom Lift Capacity at Ground Line, lb. (kg)****	1216 (552)
Dipperstick Lift Capacity at 8 ft. Above Ground, lb. (kg)	1499 (680)

* Theoretical excludes steering pump horsepower

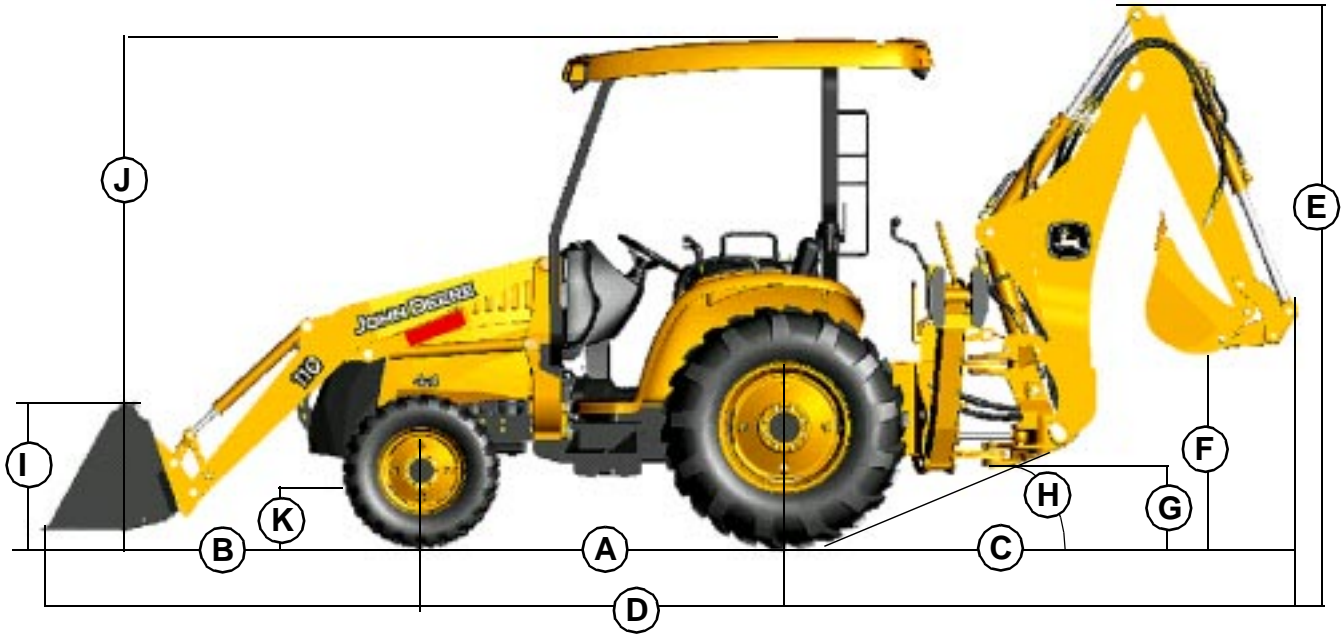
** Per SAE J49

*** No ballast in tires

**** Per SAE J31

DIMENSIONS

110 TLB Dimensions and Specifications

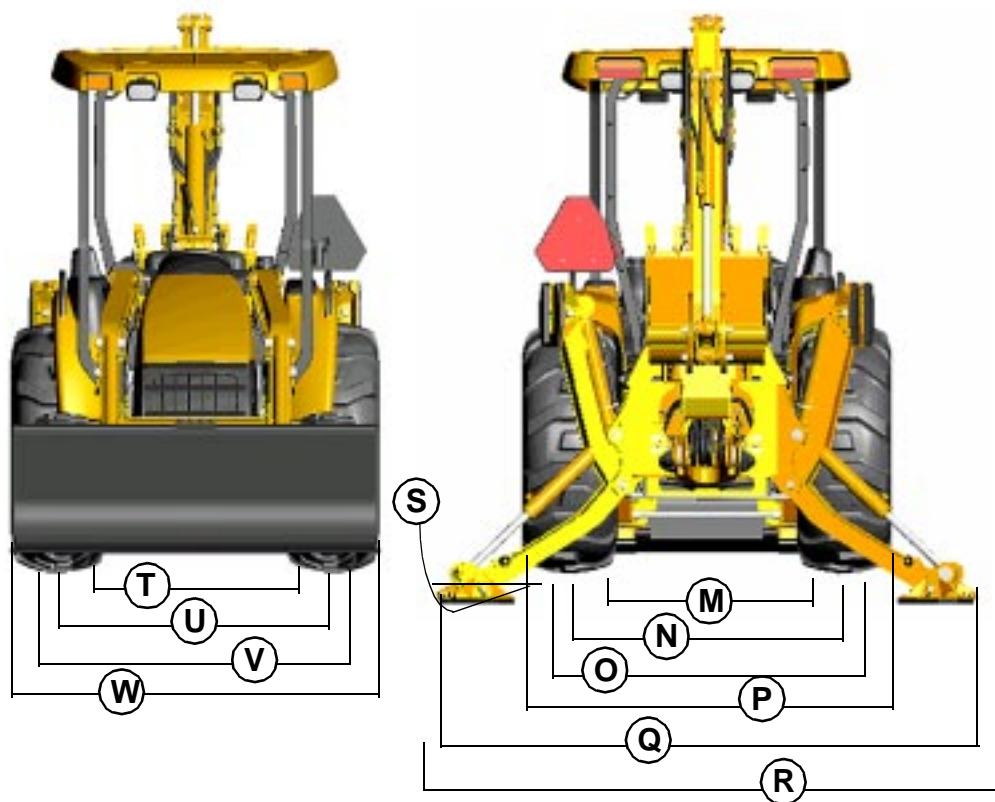


Transport Dimensions:

(A)-Wheelbase - ft. (mm)	5.96 (1816)
(B)-Reach With Loader At Ground - ft. (mm)	6.24 (1903)
(C)-Transport Length Backhoe to Centerline of Rear Axle - ft. (mm)	8.44 (2571)
(D)-Overall Transport Length With Backhoe Folded Back - ft. (mm)	21.65 (6599)
Overall Transport Length with Backhoe Folded Side - ft (mm)	17.38 (5298)
Overall Transport Length with Box Blade - ft (mm)	18.0 (5490)
(E)-Transport Height - ft. (mm)	8.95 (2729)
(F)-Clearance Under Backhoe Bucket when Curled - ft. (mm)	3.15 (961)
(G)-Ground Clearance Under Backhoe - ft. (mm)	1.16 (354)
(I)-Height to Top of Bucket - ft. (mm)	2.34 (714)
(J)-Height to Top of Canopy - ft. (mm)	8.41 (2563)
(K)-Ground Clearance Under Front Axle - ft. (mm)	.96 (294)

Backhoe Dimensions

Maximum Digging Depth - ft. (mm)	10.08 (3073)
2-Ft. Flat Bottom Digging Depth - ft (mm)	9.91 (3021)
8-Ft. Flat Bottom Digging Depth - ft (mm)	8.52 (2597)
Truck Loading Height - ft. (mm)	8.42 (2567)
Truck Loading Reach from Swing Pivot - ft. (mm)	5.45 (1662)
Maximum Truck Loading Height - ft. (mm)	9.1 (2774)
Loading Reach from Swing Axis at Maximum Height - ft. (mm)	4.22 (1285)
Reach from Swing Pivot - ft. (mm)	13.18 (4016)
Operating Height When Fully Raised - ft. (mm)	13.17 (4013)
Maximum Trench Length - ft. (mm)	14.83 (4520)
Undercut from Swing Pivot - ft. (mm)	1.65 (504)
Swing Pivot to Rear Axle Centerline - ft (mm)	3.44 (1050)
(H)-Departure Angle	21



Tire and Tread Widths:

(M) Rear Tires Inside to Inside - ft. (mm)	2.73 (833)
(N) Rear Tires Tread Width - ft. (mm)	4.45 (1356)
(P) Rear Tires Outside to Outside - ft. (mm)	5.95 (1812)
(T) Front Tires Inside to Inside - ft (mm)	3.38 (1031)
(U) Front Tires Tread Width - ft. (mm)	4.33 (1319)
(V) Front Tires Outside to Outside - ft. (mm)	5.24 (1596)

Operating Widths and Angles:

(O) Transport Stabilizer Width - ft. (mm)	5.51 (1680)
(Q) Operating Stabilizer Width - ft. (mm)	8.17 (2489)
(R) Lowering Stabilizer Width - ft. (mm)	9.20 (2805)
(S) Stabilizer Arm Leveling Angle - degrees	13
(X) Transport Width - ft. (mm)	6.0 (1815)

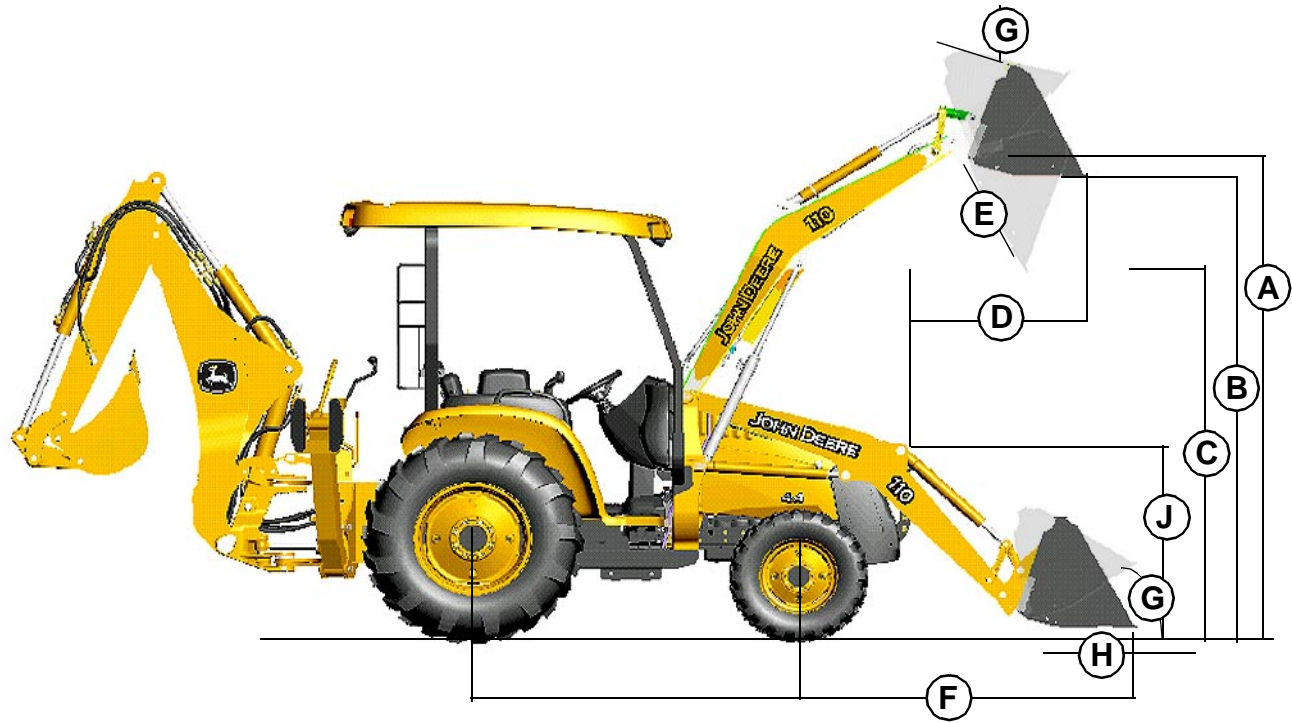
Turning Radius:

Curb Turning Radius Without Turning Brake, MFWD off - ft. (mm)	12.0 (3658)
Curb Turning Radius With Turning Brake, MFWD off - ft. (mm)	10.33 (3150)
Bucket Clearance Circle w/o Turning Brake Applied, ft. (mm)	16.25 (4953)
Bucket Clearance Circle w/ Turning Brake Applied, ft (mm)	15.5 (4724)

Vehicle Weights:

Weight with HD Front Loader Bucket and 24 In. Backhoe Bucket - lbs. (kg)	7600 (3447)
Weight Distribution On Above Package - percent front rear	28% Front / 72% Rear
Weight with MP Front Loader Bucket and 84 In. Box Blade - lbs. (kg)	7280 (3302)
Weight Distribution On Above Package - percent front rear	46% Front / 54% Rear

110 TLB Loader Dimensions

**Maximum lift height:**

(A) To pivot pin - ft. (mm) 9.6 (2917)

Clearance:

(B) With level bucket - ft. (mm) 8.7 (2667)

(C) With bucket dumped - ft. (mm) 7.33 (2235)

(H) Dipping depth- ft. (mm) .49 (149)

Reach:

(D) At max. lift height - ft. (mm) 2.08 (635)

(F) With bucket on ground - ft. (mm) 6.10 (1860)

Angles:

(E) Max. dump angle 45 degrees

(G) Max. rollback angle 45 degrees

Overall height:

(J) In carrying position - ft. (mm) 5.13 (1564)

Lift capacity:

To max. height at pivot pin - lbs. (kg) 2727 (1237)

To max. height - lbs. (kg) 2042 (926)

To 1.5 m (59-in.) at pivot pin - lbs. (kg) 3133 (1421)

To 1.5 m (59-in.) - lbs. (kg) 2530 (1148)

Breakout force:

At pivot pin - ft. lbs. (N) 3965 (17635)

500 mm forward of pivot point - ft. lbs. (N) 3133 (13680)

Bucket rollback force:

At max. height - ft. lbs. (N) 2968 (13201)

At 1.5 m (59-in.) lift height - ft. lbs. (N) 4641 (20646)

At ground level line - ft. lbs. (N) 4855 (21594)

Cycle times (in seconds):

Loader raising time 3.44

Loader lowering time 2.31

Bucket dumping time 2.84

Bucket rollback time 1.91

LOADER FRONT BUCKET SPECIFICATIONS

DESCRIPTION	WIDTH in. (mm)	DEPTH in. (mm)	HEIGHT in. (mm)	OPERATING WGT. lb. (kg)	STRUCK ft ³ (m ³)	HEAPED ft ³ (m ³)
72-in. Standard	72.0 (1829)	27.1 (689)	25.8 (655)	216 (475)	12.3 (0.35)	16.0 (0.45)
72-in. Heavy Duty	72.0 (1829)	27.1 (689)	25.8 (655)	195 (429)	12.3 (0.35)	16.0 (0.45)
72-in. Multi Purpose	72.0(1829)	25.3 (644)	24.7 (627)	654 (297)	13.3 (0.38)	16.1(0.45)
84-in. Utility	84.0 (2134)	33.8 (858)	27.6 (700)	563 (255)	19.5 (0.55)	25.4 (0.72)

WEIGHT TABLE FOR COMMONLY CARRIED MATERIALS

DESCRIPTION	Kg per L	Lb. per Ft ³	DESCRIPTION	Lb. per Ft ³	Kg per L
Alum. lump	0.88	55	Lime, hydrated	36	0.58
Alum. pulverized	0.77	48	Lime-quick lump	53	0.85
Ashes, dry	0.61	38	Limestone, crushed	88	1.41
Bark	0.24	15	Linseed	56	0.90
Bauxite, crush dry	1.29	80	Lye	110	1.77
Beans, shelled	0.77	48	Lagnesite	120	1.93
Bone meal	0.92	57	Mica, flaked	20	0.32
Bones, crushed	0.59	37	Oats	26	0.42
Borax	0.85	53	Peanuts, shelled	17.5	0.28
Brewers grain, dry	0.45	28	Peas, dried	48	0.77
Brewers grain, wet	0.92	57	Phosphate, granular	90	1.45
Cement, bulk	1.61	100	Phosphate rock	200	3.22
Chalk, crushed	1.40	87	Potatoes, white	48	0.77
Chalk, powdered	0.48	30	Powder, baking	50	0.80
Charcoal	0.37	23	Quartz, solid	165	2.66
Chips, pulpwood	0.29	18	Quartz, granular	110	1.77
Clay, compact	1.75	109	Rice, clean	45	0.72
Clay, dry lump	1.01	63	Rye	44	0.71
Clay, brick or tile	1.77	110	Salt, coarse	48	0.77
Coal, pulverized	0.54	34	Sand, dry	100	1.61
Cocoa beans	0.64	40	Sand, damp	115	1.85
Coffee, green	0.64	40	Sand, foundry	95	1.53
Coffee, roasted	0.54	34	Sand, silica dry	95	1.53
Coke, loose	0.43	27	Shale, crushed	88	1.41
Copper ore	1.61	100	Slag, furnace gran.	63	1.01
Copra	0.35	22	Snow, dry	5-15	0.08-0.24
Cork, dry ground	0.19	12	Snow, wet	15-50	0.24-0.80
Corn, shelled	0.72	45	Soap chips	10	0.16
Cottonseed, dry	0.40	25	Soda ash, light	28	0.45
Earth, loam dry	1.22	76	Soda ash, dense	60	0.96
Flax seed	0.72	45	Sodium alum., grd.	72	1.16
Fuller's earth, burnt	0.64	40	Soybeans	46.4	0.74
Fuller's earth, oily	1.08	67	Starch	45	0.72
Fuller's earth, raw	0.59	37	Steel chips, uncrushed	25-85	0.40-1.37
Garbage, average	0.48	30	Steel chips, crushed	80-150	1.29-2.41
Glass, window, broken	1.29	80	Stone or gravel	95	1.53
Granite, broken	1.54	96	Sugar beet pulp, dry	13	0.21
Grass seed	0.17	11	Sugar bet pulp, wet	35	0.56
Gravel	1.53	95	Sugar cane, knifed	17	0.27
Gypsum, calcinated	0.92	57	Sugar cane, unknifed	23	0.37
Gypsum, crushed	1.53	95	Sugar, raw	60	0.96
Ice, crushed	0.59	37	Sugar, refined	53	0.85
Ice, solid	0.92	57	Sulphur, lumpy	83	1.33
Iron, cast pig	7.24	450	Sulphur, powered	5	0.08
Iron, cast borings	2.09-3.22	130-200	Talc	55	0.88
Iron ore	1.93-2.89	120-180	Tobacco, coarse stems	16-25	0.26-0.40
Iron ore, crushed	2.01	125	Wheat	48	0.77
Lead ore, galena	7.48	465	Zinc ore, crushed	160	2.57
Lead ore, oxides	0.48-2.41	30-150	Zinc oxide	23	0.37

BACKHOE BUCKET SPECIFICATIONS

Buckets and Capacities	Digging Teeth	Heaped-ft ³ (m ³)	Struck-ft ³ (m ³)	Wt.-lb. (kg)
12 Inch Pin On Bucket	3	1.3 (0.036)		122 (55)
18 Inch Pin On Bucket	4	2.3 (0.065)		148 (67)
24 Inch Pin On Bucket	5	3.3 (0.093)		177 (80)
30 Inch Pin On Bucket	0	4.3 (0.122)		187 (85)
36 Inch Pin On Bucket	0	5.3 (0.150)		213 (97)
12 Inch Quick Couple Bucket	3	1.5 (0.042)	1.19 (.034)	109 (49)
16 Inch Quick Couple Bucket	3	2.1 (0.059)	1.63 (.046)	127 (58)
20 Inch Quick Couple Bucket	4	2.8 (0.079)	2.07 (.059)	122 (55)
24 Inch Quick Couple Bucket	4	3.4 (0.096)	2.51 (.071)	140 (64)
30 Inch Quick Couple Bucket	0	4.4 (0.125)	3.17 (.090)	167 (76)

BACKHOE CRANING CAPACITY

Bucket Pin Height Above/Below Ground (ft.)	Boom Lift (lb.)	Dipper Lift (lb.)
+10	1052	
+8	1219	1499
+6	1252	1535
+4	1248	2023
+2	1232	
Ground Line	1216	
-2	1207	
-4	1217	
-6	1284	

Note: Lift capacities are over-end values in pounds according to SAE J31. Values listed are 87% of the maximum lift force available, and are determined with an 18-inch pin-on bucket. Dipper lift is determined with the boom at 65 degrees and the boom lock disengaged.

GROUND SPEEDS

110 TRACTOR LOADER BACKHOE - eHYDRO™

Range	mph	km/h
Forward A	4.18	6.72
Forward B	6.97	11.22
Forward C	16.77	26.99
Reverse A	4.18	6.72
Reverse B	6.97	11.22
Reverse C	16.77	26.99

Note: Ground speeds shown are with tractor operated at maximum 2600 engine rpm, 13.6-28 tires.

TIRE DATA

This information identifies the various tires that are available for the 110 Tractor Loader Backhoe.

WHEELS AND TIRES



R4 Industrial



Galaxy Turf

Tire Tread Applications:

- All wheels and tires on the 110 Tractor Loader Backhoe are single position.
- Galaxy Heavy Duty Industrial (R4) Tread—Designed for operation over a variety of rough surfaces, such as might be encountered by contractors, and rental yards. More aggressive in very sloppy operating conditions. Lugs provide traction.
- Galaxy Mighty Mow Turf (R3) Tread —Specially designed for operation on more sensitive landscapes, such as might be encountered by golf courses, parks, cemeteries, and sandy soils. Less aggressive in very sloppy operating conditions. Spreads tractor's weight over a larger area for improved flotation and reduced turf damage. Also provides longer tread life if the tractor is operated extensively on asphalt or concrete surfaces.
- Tire dimension will vary slightly due to manufacturing tolerances. Tire dimensions will change with use and age.

FRONT TIRES

Tire	Tread Code	Tread Pattern	Ply Rating	Outside Diameter in. (mm)	*SL Radius in. (mm)	Carry Capacity lb. (kg)	Air Pressure psi (kPa)	Tread Width in. (mm)	Wheel Size in. (mm)	Manufacturer	Type
10x16.5	R4	H D Ind.	8	30.4 (772)	14.1 (358)	2698 (1224)	50 (345)	10.4 (264)	16.5x8.25 (419x210)	Galaxy Marathoner	Tubeless
10x16.5	R3	H D Turf	8	27.2 (691)	14.0 (356)	2689 (1224)	50 (345)	10.5 (267)	16.5x8.25 (419x210)	Galaxy Mighty Mow	Tubeless
	R 3	Extra Low Pressure				2376 (1078)	20 (138)			Galaxy Mighty Mow	

REAR TIRES

Tire	Tread Code	Tread Pattern	Ply Rating	Outside Diameter in. (mm)	*SL Radius in. (mm)	Carry Capacity lb. (kg)	Air Pressure psi (kPa)	Tread Width in. (mm)	Wheel Size in. (mm)	Manufacturer	Type
17.5Lx24	R4	H D Ind.	8	48.9 (1242)	22.0 (559)	5842 (2650)	26 (179)	17.1 (434)	24x15.0 (610x381)	Galaxy Industrial Lug	Tubeless
17.5Lx24	R3	H D Turf	8	48.8 (1240)	21.6 (549)	5842 (2650)	26 (179)	23 (584)	24x15.0 (610x381)	Galaxy Mighty Mow	Tubeless
		Extra Low Pressure				3172 (1439)	12 (83)				

* Static loaded radius is the distance measured from the center of the wheel to the ground with weight of the tractor on the tires.

Note:

- Tire sizes may not be changed. Correct MFWD overspeed ratios must be maintained.
- Tires and wheels from other John Deere products may not be used. Tire sets from John Deere 4000 TEN Series tractors will have incorrect offsets and insufficient ply ratings and wheel rim strength.

Contact Galaxy Tire for replacement tires:

Galaxy Tire East - World Headquarters

730 Eastern Avenue

Malden, MA 02148

Ph: (800) 343-3276

Fax: (781) 322-2147

Email: Lbrown@galaxytire.com